

NORDMENDE
THOMSON TECHNOLOGY

SABA

TELEFUNKEN

THOMSON

AUDIOVISION
AUDIOVISION
AUDIOVISUEL

VIDEORECORDER

Bestell-Nr. 103.165.50

Chassis R 4000
Hifi – Stereo

Schaltbilder / Circuit diagrams

Service-Hinweise / Service Notes

Ersatzteile / Spare parts

NORDMENDE

TELEFUNKEN

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Hinweis:

Mechanische Einstellungen entnehmen Sie bitte der Service Information für das Laufwerk R4000.
Bestellnummer : 102.859.90

Note:

Mechanical adjustments please take from the service manual for Mecha-Deck R4000.
Order number : 102.859.90

Videorecorder R4000 / HiFi-Stereo

PAL / MESECAM / SECAM L

Model	Heads	VPS/PDC	Front AV	Dubbing	SVHS PB	Special Feature	Service Setup Values*
M 9460	4+2	+					410822192009102308
M 9470	4+2	+	+	+	PAL	SAT CTL	400222236415152312
V3445SV	4+2	+	+	+		SAT CTL	110822232415116312
V4445SV	4+2	+	+	+	PAL	SAT CTL / LP Skew	110822312415116312
VPH6400	4+2	prep					000120196009102308
VPH6480	4+2	prep.	+	+		Karaoke	000220196415112308
FV 88 HVX	4+2	+	+				770921192415113309

* Weitere Einzelheiten zu den Service Setup Einstellungen finden Sie im Kapitel "Einrichten der Bedienteil-Software"

* For more details concerning the Service Setup Values refer to the chapter "KDB Software Set-Up".

1. Service Hinweise

1.1 Demontage des Gerätes

1.1.1 Gehäuse

- 3 Schrauben an der Rückseite des Gehäuses herausdrehen.
- Die zwei seitlichen Schrauben herausdrehen
- Das Gehäuseoberteil leicht nach hinten ziehen und anheben.

1.1.2 Frontblende

- 2 Schrauben an der Oberseite links und rechts vom Kassettenfach herausdrehen.
- 2 Kunststoffzungen an der Oberseite anheben.
- Kunststoffzungen links und rechts an der Frontblende lösen.
- 2 Kunststoffzungen an der Unterkante der Frontblende anheben und die Frontblende abnehmen.
- Hinweis: Bei der Montage der Frontblende ist darauf zu achten, daß die Kassettenfachklappe hinter den Betätigungshebel auf der linken Seite des Kassettenschachts positioniert wird. Bei der Montage darf keine Kassette eingelegt sein.

1.1.3 Bedienteil-Platte (Key Display Board)

- Eine Schraube (links neben dem Display) herausdrehen.
- 2 Rastnasen an der Oberkante der Bedienteil-Platte anheben und Platte nach vorne/oben herausheben.

1.1.4 Front-Anschlußplatte (nicht bei allen Geräten)

- Eine Schraube entfernen und 2 Rastnasen anheben. Die Platte nach vorn abnehmen.

1.1.5 Bodenplatte

- Eine Schraube aus der Bodenplatte entfernen.
- Die Bodenplatte (in der Mitte) entrasten, nach vorn schieben und abnehmen.

1. Service Notes

1.1 Disassembly

1.1.1 Top cover

- Remove three screws from the rear.
- Remove the two side screws.
- Pull the top cover slightly backwards and lift.

1.1.2 Front panel

- Remove two screws on the front left and right side of the cassette housing.
- Bend the two top hooks of the front panel upwards to disengage them from their chassis retainers.
- Disengage the side hooks of the front panel.
- Disengage two lower hooks of the front panel and pull the front panel forward and downward to remove.
- Note: When remounting the front panel it is necessary to position the cassette flap behind the lever at the lefthand side of the cassette housing. When mounting the front panel there should be no cassette inserted.

1.1.3 Key Display Board

- Remove one screw (on the left next to the display).
- Disengage two hooks on the upper edge of the KDB and remove the board in a forward and upward direction.

1.1.4 Front connection board (not in all cases)

- Remove one screw and release the two clips at the upper edge of the board.

1.1.5 Bottom cover

- Take out one screw from the base.
- Release the clip in the center of the bottom cover, push the cover to the back and lift it.

1.1.6 Hauptleiterplatte kpl. mit Laufwerk(Mecha Deck)

- a) Die Schraube in der Mitte der Bodenplatte von unten entfernen.
- b) Frontblende entfernen und die Steckverbindungen auf der Bedienteil-Platte lösen.
- c) Verbindungsleitungen zur Tuner/ZF Platte lösen.
- d) 2 Schrauben links und rechts (von oben) des Laufwerks herausdrehen.
- e) Eine Schraube am Halter der Scartanschlußplatte herausdrehen.
- e) Die 2 Clips, die die Hauptplatine halten, lösen.
- f) Hauptleiterplatte kpl. mit Laufwerk nach oben herausnehmen.

1.1.7 Scartanschlußplatte

- a) Die Hauptleiterplatte kpl. mit Laufwerk ausbauen.
- b) Die Scartanschlußplatte ist mit 3 Steckverbindern auf der Hauptleiterplatte befestigt.

1.1.8 Tuner / ZF Platte

- a) Die Schraube am Halter für die Scartanschlußplatte herausdrehen.
- b) Drei Rastnasen am Boden des Gerätes und eine Rastnase an der Rückseite des Gerätes lösen.
- c) Platte herausnehmen.

1.1.9 Kassettenschacht

Vorher Pkt. 1.1.6 durchführen.

- a) 2 Schrauben links und rechts am Kassettenschacht lösen.
- b) Den oberen Teil des Kassettenschachtes abheben.
- c) Den Kassettenthalter bis zum vorderen Anschlag zurückziehen.
- d) Die zur Kopftrommel zeigende Seite des Kassettenthalters leicht anheben.
- e) Die weißen Hebel links und rechts am Kassettenthalter entriegeln und den Kassettenthalter in Richtung Kopftrommel schieben, bis die hinteren Führungs-zapfen aus ihrer Führung genommen werden können
- f) Jetzt den Kassettenthalter wieder in die entgegengesetzte Richtung ziehen, bis auch die vorderen Führungszapfen aus der Führung genommen werden können.

1.1.10 Hauptleiterplatte vom Laufwerk trennen

Vorher Pkt. 1.1.6 durchführen.

- a) Steckverbindungen W503 (am Funktions-Kontroll-motor), P101 (Kopftrommel) und W701 (am Ton-/ Kontrollkopf) abziehen.
- b) Eine, mit einem Pfeil markierte Schraube, von der Lötseite der Hauptplatine herausdrehen.
- c) Antriebsriemen entfernen.
- d) Leiterplatte entrasten (4 Clips) und abnehmen.

1.1.6 Main board assy. with Mecha Deck

- a) Remove the centre screw from the base.
- b) Remove the front panel and disconnect the cable connections on the key display board.
- c) Remove 2 screws on the left and right of the Mecha deck.
- d) Disconnect the cable connectors to the Tuner/IF Sub board.
- e) Remove one screw from the holder of the Scart connection board.
- d) Release the 2 clips, which are securing the main board.
- e) Remove the Mecha Deck with the main board upwards.

1.1.7 Scart connection board

- a) Remove the main board assy. with the Mecha Deck.
- b) The Scart connection board is fixed on the Main board with three connectors.

1.1.8 Tuner / IF Sub main board

- a) Remove one screw from the holder of the scart connection board.
- b) Release three clips, which are securing the board at the bottom of the set. Release one clip at the rear of the set.
- c) Remove the board.

1.1.9 Cassette housing

Before doing this step please do step 1.1.6.

- a) Take out two screws at the left and the right side of the upper part of the cassette holder.
- b) Remove the upper part of the cassette holder
- c) Pull the remaining part to the upper end position.(Eject position)
- d) Lift the cassette holder at the side, which shows to the drum.
- e) Release the white levers (left and right of the cassette holder) and push the cassette holder towards the drum until the guide pins at the rear side come out of the guide rails.
- f) Now pull the cassette holder in the opposite direction until the guide pins at the front side also come out of the guide rails.

1.1.10 Separate Main board from Mecha Deck

Before doing this step please do step Pt.1.1.6.

- a) Disconnect the cable connection W503 (at function control motor), P101 (to drum motor) and W701 (at audio- / servo control head).
- b) Take one screw marked with an arrow from the solder side of the main board.
- c) Remove the capstan belt.
- d) Release the 4 clips and remove the main board.

1.2 Austausch der Kopftrommeleinheit

Zum Ausbau der Kopftrommeleinheit ist es **nicht** erforderlich, das Laufwerk auszubauen.

(Siehe Bild unten)

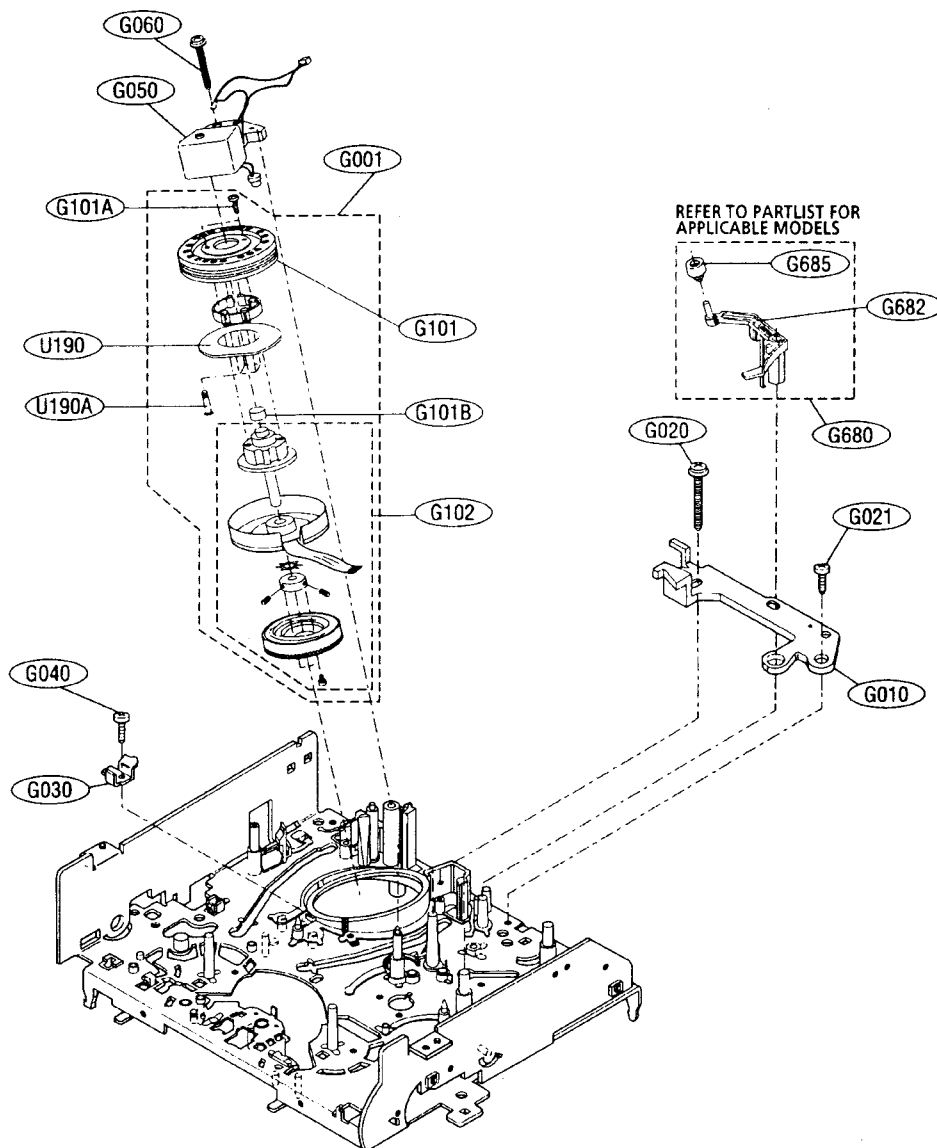
- Die Schraube (G060) am Schleifergehäuse (oben auf der Kopftrommel) herausdrehen.
- Schraube (G040) und das Metallteil (G030) (rechts neben dem Bandzug- Fühlhebel) entfernen.
- 2 Schrauben (G020 und G021) und Metallteil (G010) (oberhalb der Kopftrommel) entfernen.
- Verbindungsleitung von der Kopftrommel zum Main Board (P101) lösen.
- Kopftrommeleinheit herausnehmen.

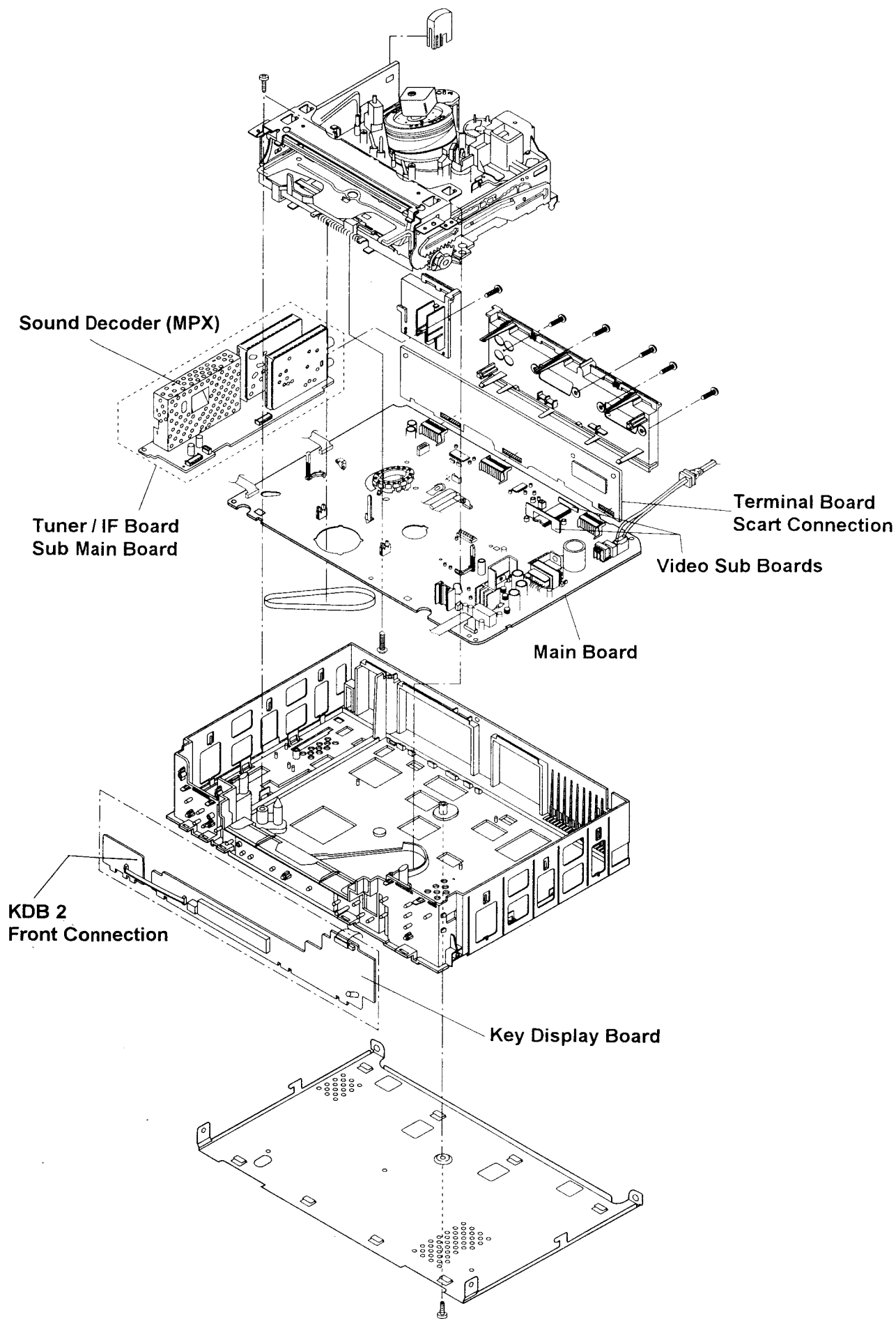
1.2 Exchange of drum unit

It is **not** necessary to remove the mechanism in order to remove the drum unit.

(Refer to the picture below)

- Remove the screw (G060) at the slip ring assembly at the top of the drum unit.
- Remove one screw (G040) and the metal part (G030) in front of the drum (on the right next to the tension arm)
- Remove two screws (G020 and G021) and the metal part (G010) behind the drum unit.
- Remove the wire connection from Main board (P101) to the drum unit.
- Remove the drum unit.





1.3 Service Einstellungen

1.3.1 Einrichten der Bedienteil-Software

Es ist notwendig den KDB-Prozessor über die bestehende Hardware-Konfiguration zu informieren. Dies wird bereits ab Werk konfiguriert und in den EEPROM abgelegt.

1. Videorecorder vom Netz trennen.
2. Tasten "-" und "+" an der Frontseite gedrückt halten und dabei den Recorder am Netz anschließen.

Auf dem TV-Schirm werden 18 Ziffern angezeigt, die den aktuellen Zustand des Gerätes anzeigen.

Im Display erscheint "SETUP".

Im Service Mode können einige typenspezifische Einstellungen vorgenommen werden. In der **Tabelle auf Seite 3 dieser Unterlage** ist für jeden Gerätetyp die spezifische Zahlenkombination angegeben. Die Bedeutung der einzelnen Ziffern ist in der nachfolgenden Tabelle (Seite 8) aufgeführt. Die jeweils einzustellende Ziffer blinkt auf dem Bildschirm. Die Eingaben werden mit den Zifferntasten auf der Fernbedienung durchgeführt. Nachdem alle 18 Ziffern eingegeben wurden, blinkt die erste Ziffer wieder.

Um die neuen Einstellungen abzuspeichern, drücken Sie bitte die STOP Taste. Sie können den Service Mode auch verlassen, ohne abzuspeichern. Dazu drücken Sie bitte die EXIT Taste auf der Fernbedienung.

Wenn Sie die neuen Werte abgespeichert haben, dauert es einige Sekunden, bis diese in das EEPROM geschrieben sind. Während dieser Zeit bleibt das Display dunkel.

SERVICE SETUP

Type in the set dependent number

001220010101000000

>> Nächste Seite (Elektr. Einst.)

STOP Speichern der Eingaben

EXIT Ende ohne zu speichern

Die Taste "Schneller Vorlauf (>>)" dient zur Auswahl der zweiten Seite des Service Modes. In dieser zweiten Ebene werden einige elektrische Einstellungen für die Signalverarbeitung vorgenommen.

Anmerkung:

Nach der Änderung der Einstellungen im Service Mode ist es erforderlich, den Kopftrommel - Umschaltpunkt neu zu setzen.

1.3.2 Kopf-Trommel-Umschaltpunkt

Legen Sie eine schreibgeschützte Video-Meßkassette (Farbbalken oder Grautreppe) in den Videorecorder. Der Recorder geht automatisch in Wiedergabe. Während das Display "PLAY E----" anzeigt, drücken Sie auf der Fernbedienung die Taste "Status". Anschließend drücken Sie am Gerät die Tasten "PLAY" und "+" und "-" gleichzeitig. Das Display zeigt "ADJ" an. Der Videorecorder bleibt in Wiedergabe Mode. Nach einer kurzen Wartezeit beenden Sie die Einstellung, indem Sie eine beliebige Laufwerks-Taste am Bedienteil der Frontblende drücken.

(siehe auch Punkt 2.2.5 der elektrischen Einstellungen)

1.3.3 Sprachumschaltung

Taste "STATUS" der Fernbedienung gedrückt halten, bis die gewünschte Sprache im Display und auf dem Bildschirm erscheint.

1.3 Service Adjustments

1.3.1 KDB Software Set-Up

It is necessary to inform the KDB processor which hardware configuration is present. This is done in the factory and the selections stored in the EEPROM.

1. Disconnect the VTR from the mains.

2. Hold keys "-" and "+" pressed and connect the VTR to the mains.

On the TV screen 18 digits are shown, representing the actual Setup values.

The display shows "SETUP".

In this SERVICE SET UP mode, some VTR-TYPE specific settings can be done. In the **table on page 3 of this document** you will find the values to be entered for each specific set. The meaning of each digit is listed in the following table (page 8). The actual digit for the input is flashing on the screen. The inputs are done by the numeric keys on the remote control. After the input of all 18 digits, the first digit is flashing again. Store the new settings by pressing the STOP key on the remote control. You can also leave the SERVICE SET UP mode without storing the new settings. To do so, please press the EXIT key on the remote control.

If you have decided to store the new settings, it takes some seconds to initialise the EEPROM. During this time the display remains dark.

SERVICE SETUP

Type in the set dependent number

001220010101000000

>> next page (Y/C settings)

STOP store data

EXIT exit without save

The key "FAST FORWARD (>>)" is used to switch over to the second page of the Service Mode. This function is used to perform some electrical adjustments for the signal processing.

Important note:

After the modification of the settings in the Service mode, a new adjustment of the HEAD SWITCHING POINT is necessary.

1.3.2 Head switching point

Insert a protected adjustment test cassette into the video recorder. Playback is set automatically. When the display shows "PLAY E----" press the key "STATUS" on the remote control. After that, press PLAY and "+" and "-" keys on the front panel (Hold all three keys pressed). The display indicates "ADJ". The VCR will stay in PLAY mode. After a few seconds, stop the adjustment by pressing Stop key on the front panel.

(see point. 2.2.5 of the electrical adjustments)

1.3.3 Language selection

Keep the STATUS key pressed down, to choose the language of the menus on the display and on the TV screen.

Number of digit	Meaning	Value	
1	Brand	0 - Thomson 1 - Nordmende 2 - Ferguson (Thomson) 3 - Thomson (ASIA) 4 - Telefunken 5 - Saba 6 - Brandt 7 - Ferguson (Saba) 8 - GE (Australia)	
2	Tuner Sound	0 - L (4.5 MHz AM) 1 - BG (5.5 MHz FM) 2 - I (6 MHz FM) 3 - DKK' (6.5 MHz FM) 4 - BH (5.5 MHz) 5 - DK' (China) 6 - NTSC-M 7 - PAL I UK	
3 and 4	Tuner standard	00 - Secam L 01 - PAL-Secam (Multi) 02 - Central Europe (BG,DK,L) 03 - Pan Europe (BG,DK,L,I,M) 08 - Germany (BG) 09 - UK (PAL I Ire, PAL I UK) 10 - ME (BG,DK) 11 - AU (BG,BH) 12 - X (BG,DK,I) 13 - FE,HK,China (BG,DKK',I,DK"C") 14 - FM (BG,DKK',I,DK"C",M)	DKK' = DK OIRT DK"C" = DK China
5	KDB Version	0 - LED Keyboard 1 - VFD/NTSC (OSD by Main μ P) 2 - VFD (OSD by Front μ P)	
6	Language	0 - french/malay 1 - english 2 - german/chinese 3 - italien/thai 4 - spanish 5 - swedish 6 - dutch	
7 and 8	Servo Type	bit 0 - Longplay enabled = 1 bit 1 - HIFI enabled = 1 bit 2 - Dubbing enabled = 1 bit 3 - Flying erase enabled = 1 bit 4 - Auto play enabled = 1	$15_{dec} = (01111)$ Fly erase /dubbing/Hifi / LP if one bit is 0 , the corresponding function is disabled
9	Servo Type (Heads)	0 - 2 head PAL 1 - 3 head PAL 2 - 4 head PAL 3 - 2 head NTSC 4 - 2 head PAL/SECAM 5 - 3 head PAL/SECAM 6 - 4 head PAL/SECAM 7 - 4 head NTSC	
10	Scart	0 - 2 Scart connectors 1 - 1 Scart connector 2 - 6 RCA (Cinch) (2 in 1 out) + Si 3 - 4 RCA (Cinch) (1 in 1 out) 4 - 2 Scart connectors + Front AV 5 - 1 Scart connector + Front AV 6 - 6 RCA + Front AV + Si 7 - 4 RCA + vFront AV	
11 and 12	Special functions	bit 0 - VIDEO + bit 1 - Satellite control bit 2 - Learning Remote Control bit 3 - Expertmode is default	if one bit is 0 , the corresponding function is disabled
13 and 14	Special functions	bit 0 - Auto Programming bit 1 - Station Identification bit 2 - Index Plus bit 3 - PDC	if one bit is 0 , the corresponding function is disabled
15	Special functions	bit 0 - Auto Clock bit 1 - NTSC playback allowed bit 2 - NTSC record allowed	if one bit is 0 , the corresponding function is disabled
16	Special functions	bit 0 - TV playback selection PAL-NTSC bit 1 - Auto LP Record	if one bit is 0 , the corresponding function is disabled
17 and 18	I.D. Tagging	bit 0 - Tagging bit 1 - Advertising message bit 2 - Channel Identification bit 3 - 99 programs/8 Timers	if one bit is 0 , the corresponding function is disabled

For the digits 7 and 8 and 11 to 18, the corresponding values of each bit have to be added, to calculate the decimal value.
Bei den Digits 7 und 8 und 11 bis 18 müssen die Dezimalzahlen durch Addition der Wertigkeit der einzelnen Bits ermittelt werden.

1.4 Einrichten der Video-Signalverarbeitung

Die Geräte werden in der Fabrik automatisch abgeglichen. Dabei werden die ermittelten Daten im EEPROM des Videorecorders abgespeichert. Ein Abgleich der Video-Signalverarbeitung von Hand ist nicht mehr erforderlich. Sollte bei einem Defekt des Gerätes das EEPROM zerstört sein, dann können die Daten für die Video-Signalverarbeitung über das Service Menü eingegeben und im neuen EEPROM gespeichert werden. Um das Service Menü zu aktivieren, gehen Sie bitte nach den folgenden Anweisungen vor.

1. Videorecorder vom Netz trennen.
 2. Tasten "-" und "+" an der Frontseite gedrückt halten und dabei den Recorder am Netz anschließen.
- Auf dem Bildschirm erscheint das Service Menü.

SERVICE SETUP

Type in the set dependent number

001220010101000000

>>

Nächste Seite (Elektr. Einst.)

STOP

Speichern der Eingaben

EXIT

Ende ohne zu speichern

Aktivieren Sie die zweite Seite des Service Modes, indem Sie auf der Fernbedienung Taste "Schneller Vorlauf (>>)" drücken.
Es erscheint das folgende Menü auf dem Bildschirm.

SERVICE SETUP

Luminance / Chrominance Einstellungen

150314

STOP

Speichern der Eingaben

EXIT

Ende ohne zu speichern

Die 6-stellige Ziffernfolge zeigt die Werte für den aktuellen Abgleich. Die Bedeutung der einzelnen Ziffern ist in der nachfolgenden Tabelle aufgeführt. Die Eingaben werden mit den Zifferntasten auf der Fernbedienung durchgeführt. Falls eine neue Eingabe der Daten erforderlich ist, geben Sie bitte die folgende Ziffernfolge ein.

150314

Diese Ziffernfolge stellt die Daten für einen optimalen Abgleich dar und gilt für alle Geräte.

1.4 Installation of the video signal processing

The sets are adjusted automatically in the factory. The data for the adjustment are saved inside the EEPROM. A manual adjustment of the video signal processing is not necessary. In case of a defect of the EEPROM the data for the adjustment of the video signal processing can be entered via the the Service Setup and saved in the EEPROM. To perform the input of the data for the video signal processing, the Service Mode has to be activated as mentioned below.

1. Disconnect the VTR from the mains.
 2. Hold keys "-" and "+" pressed and connect the VTR to the mains.
- The Service Menu will appear on the TV screen.

SERVICE SETUP

Type in the set dependent number

001220010101000000

>>

next page (Y/C settings)

STOP

store data

EXIT

exit without save

Activate the second page of the Service Mode by pressing the "FAST FORWARD (>>)" key on the remote control. The following picture appears on the TV screen.

SERVICE SETUP

Change Y/C controller settings

150314

STOP

store data

EXIT

exit without save

The 6 digits on the screen are representing the actual values for the adjustment. The meaning of each digit is listed in the following table. The inputs are done by pressing the numeric keys on the remote control. If the new input of the data is necessary, please put in the following numbers.

150314

They are valid for all sets and represent an optimal adjustment.

Number of the digit	Meaning	Value	Example
1 and 2	Playback Equalizer	bit 0-1 : PB EQ GAIN (00:min 11:max) bit 2-3 : PB EQ 2 (00:min 11:max)	1111 _b = 15 _d
3		Always 0	
4	Y/C Record Current	bit 0-2 : REC C (000:max 111:min)	101 _b = 5 _d
5	PB Noise Canceller	PBNC2 on/off	0 = off 1 = on
6	Secam Record Current	REC C Level (000:max attn 111:min attn)	101 _b = 5 _d

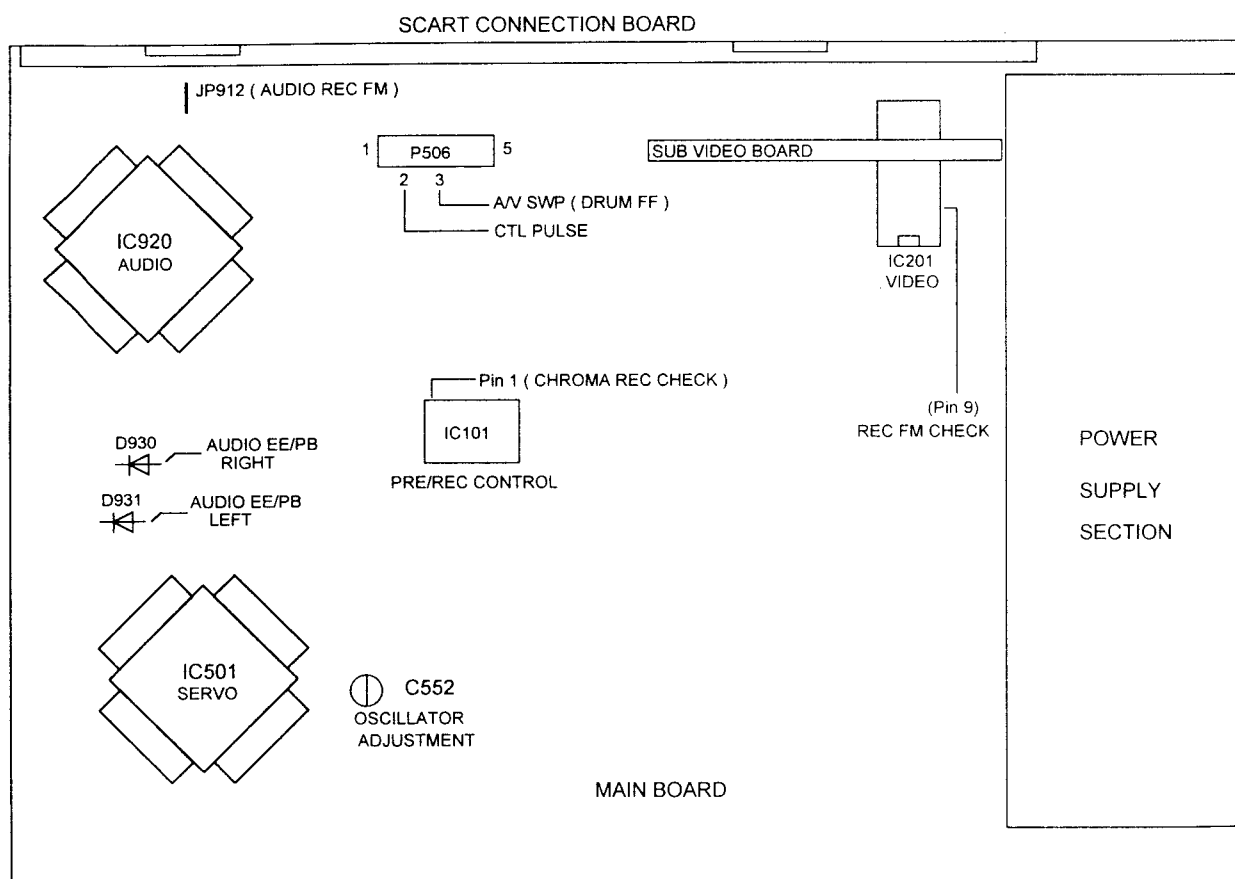
Description of digits used for the video signal processing setup.

Beschreibung der einzelnen Digits für die Einrichtung der Video Signalverarbeitung.

2. Electrical Adjustments / Elektrische Einstellungen

2.1 TEST POINT- AND ADJUSTMENT OVERVIEW · TESTPUNKT- UND ABGLEICH - ÜBERSICHT

MAIN BOARD · HAUPTLEITERPLATTE



2.2 Measurements Servo part - Main board

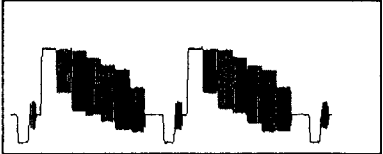
Messungen Servoteil - Hauptleiterplatte

Note: low level < 0.8 V; high level > 4.0 V

Anmerkung: L-Pegel < 0,8 Volt; H-Pegel > 4,0 Volt

No.	Einstellung Item	Betriebs- art Mode & Signal	Meßmittel Eingangssignal Test Equipment Input Signal	Meßpunkt Testpoint	Einstell- Punkt Adjustment Point	Beschreibung Description
Hinweis: Der Einsteller für den Oszillator Abgleich (C552) ist nur erreichbar, wenn das Laufwerk ausgebaut wird. Um den Abgleich vornehmen zu können, muß wenigstens die Leitung W503 zur Funktionskontrolleinheit angeschlossen werden.				Note: The variable capacitor (C552) for the oscillator adjustment is available only if the mecha deck is removed from the main board. For the adjustment it is necessary to connect at least the connection W503 to the function control unit.		
2.2.1	Oscillator Frequency Oszillator Frequenz	Service Mode	Frequency counter Frequenz-zähler	IC 501 Pin 63 (TP 501)	C552	1.) Activate the Service Mode 2.) Adjust for 4 MHz $\pm$ 40 Hz 1.) Service Mode aktivieren 2.) 4 MHz $\pm$ 40 Hz einstellen
2.2.2	Drum FF (A/V SWP) Kopftrommel-Flip-Flop	REC/ PB	Oscilloscope	IC 501 Pin 89 (P506 / 3)	None	Confirm 25 Hz signal 25 Hz Signal überprüfen
2.2.3	Capstan FG Frequency Capstan FG Frequenz	PB / REC (SP)	Frequency counter Frequenz-zähler	IC501 Pin 44	None	Confirm 757 Hz $\pm$ 10 Hz 757 Hz $\pm$ 10 Hz überprüfen
2.2.4	CTL Signal CTL-Signal	PB REC	 Oscilloscope	IC 501 Pin 46 (P506 / 2) IC501 Pin 33	None	PB: confirm 25 Hz, 5Vpp signal PB: 25 Hz, 5Vpp Signal überprüfen REC: confirm 25 Hz, 4Vpp signal REC: 25 Hz, 4Vpp Signal überprüfen
2.2.5	Head Switching Point Kopf-Trommel-Umschaltpunkt	PB PB	Dual-Trace Oscilloscope Trigger ext. P506 Pin 3 (Drum FF) Zweistrahl-Oszilloskop; Externer Triggerpkt. P506 Pin 3 (Drum FF)	SCART (AV1) Pin 19 SCART (AV1) Pin 19	Adjustment by software setup Software-Einstellung	1. Insert protected alignment test cassette 2. When the display shows "PLAY E----" press the STATUS key on remote control. 3. Press keys "+" and "-" and "PLAY". 4. Display shows "ADJ". 5. Confirm that head switching point is 6.5 H $\pm$ 1 H before vertical-sync 6. Stop the adjustment by pressing Stop key on the front panel. 1. Geschützte Meßkassette einlegen 2. Taste "STATUS" auf Fernbedienung drücken, sobald Display "PLAY E----" anzeigt. 3. Tasten "+" und "-" gedrückt halten und zusätzlich Taste "Play" drücken. 4. Display zeigt "ADJ". 5. Prüfen, ob Kopfumschaltpunkt 6,5 H $\pm$ 1 H vor dem Vertikal-Synchronimpuls liegt 6. Einstellung durch Drücken einer Laufwerks Taste beenden. I<----- 6.5 H $\pm$ 1H ----->I 

2.3 Video signal processing (Main board) • Traitement vidéo (Platine principale) Video Signalteil (Hauptleiterplatte)

Nº:	Einstellung Item	Betriebs- art Mode & Signal	Meßmittel Eingangssignal Test Equipment Input Signal	Meßpunkt Testpoint	Einstell- Punkt Adjustment Point	Beschreibung Description
2.3.1	E-E - level	E-E Colour bar 1 V _{pp}	Oscilloscope	Pin 19 of SCART (AV1)	None	 Check for 2.0 V _{pp} ± 0.1 V _{pp} 2.0 V _{ss} ± 0.1 V _{ss} messen
	E-E - Pegel	E-E Farbbal- ken, 1 V _{ss}	Oszilloskop	Anschluß 19 von SCART (AV1)	Kein Abgleich	
2.3.2	FM REC Level	REC without signal	Oscilloscope	IC201, Pin 9	None	Check for 800 mV _{pp} 800 mV _{ss} überprüfen
	FM-Aufnahme - Pegel	REC ohne Signal	Oszilloskop		Kein Abgleich	
2.3.3	PAL Chroma REC- level	REC PAL Colour bar	Oscilloscope	IC101 Pin 1	None	Check for 100 mV _{pp} ± 10 % burst amplitude 100 mV _{ss} ± 10 % Burstamplitude überprüfen
	PAL Farbaufnahme- Pegel	REC PAL Farb- balken	Oszilloskop		Kein Abgleich	
2.3.4 (not all sets)	SECAM Chroma REC- level	REC SECAM Colour bar	Oscilloscope	IC101 Pin 1	None	Check for 100 V _{pp} ± 10 % magenta bar amplitude. Magenta Farbbalken auf eine Amplitude von 100 mV _{ss} ± 10 % überprüfen.
	SECAM Farbaufnahme- Pegel	REC SECAM Farb- balken	Oszilloskop		Kein Abgleich	

2.4 On Screen Display - Main board • OSD Platine principale • OSD - Hauptleiterplatte

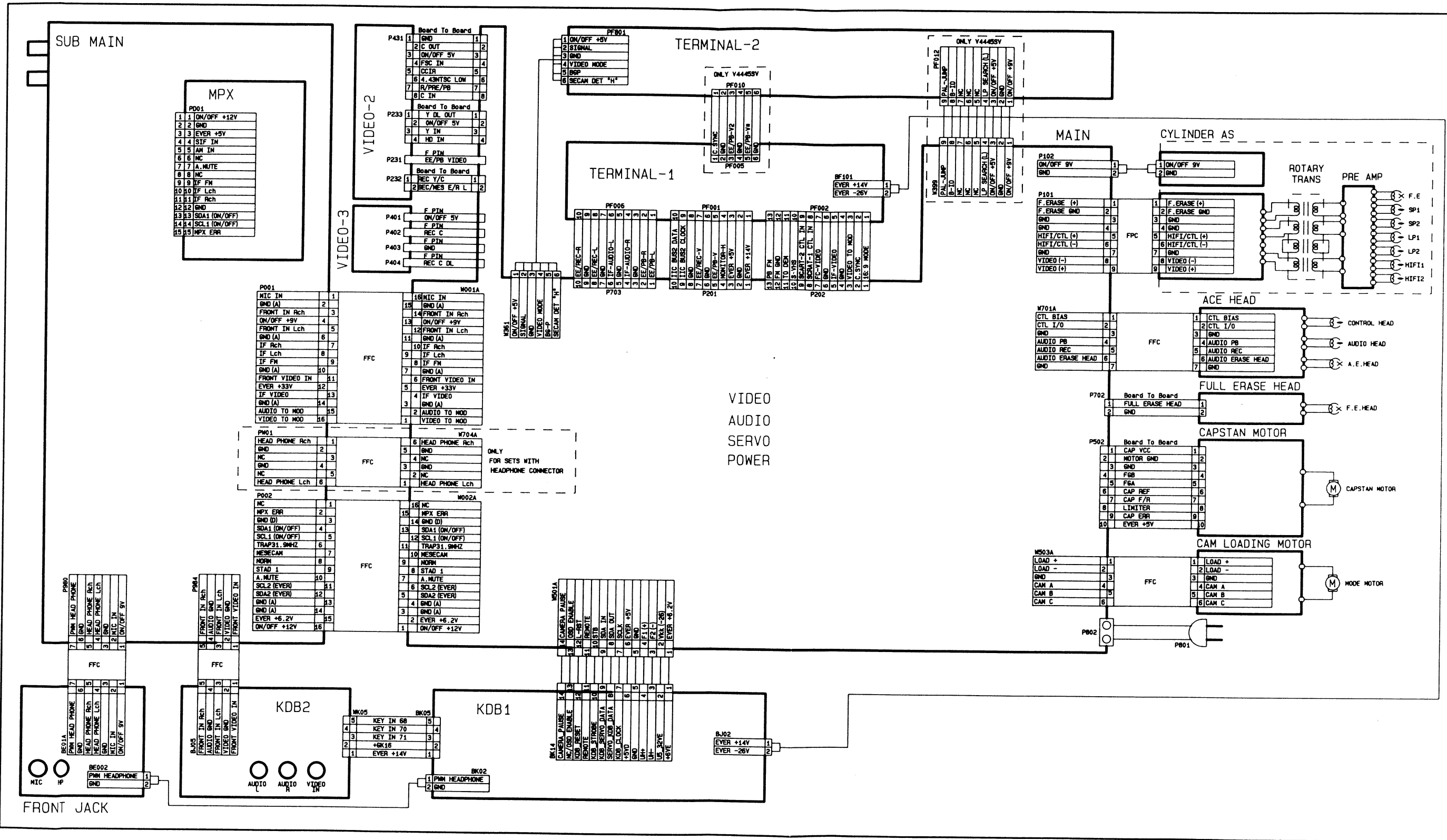
Nº:	Einstellung Item	Betriebs- art Mode & Signal	Meßmittel Eingangssignal Test Equipment Input Signal	Meßpunkt Testpoint	Einstell- Punkt Adjustment Point	Beschreibung Description
2.4.1	OSD Chroma- oscillator		Frequency- counter	via 4k7 to IC501 / 78	None	Confirm 17,734475 MHz ± 500 Hz Überprüfen der 17,734475 MHz ± 500 Hz .
			Frequenzzähler	Über 4k7 an IC501 / 78	keiner	

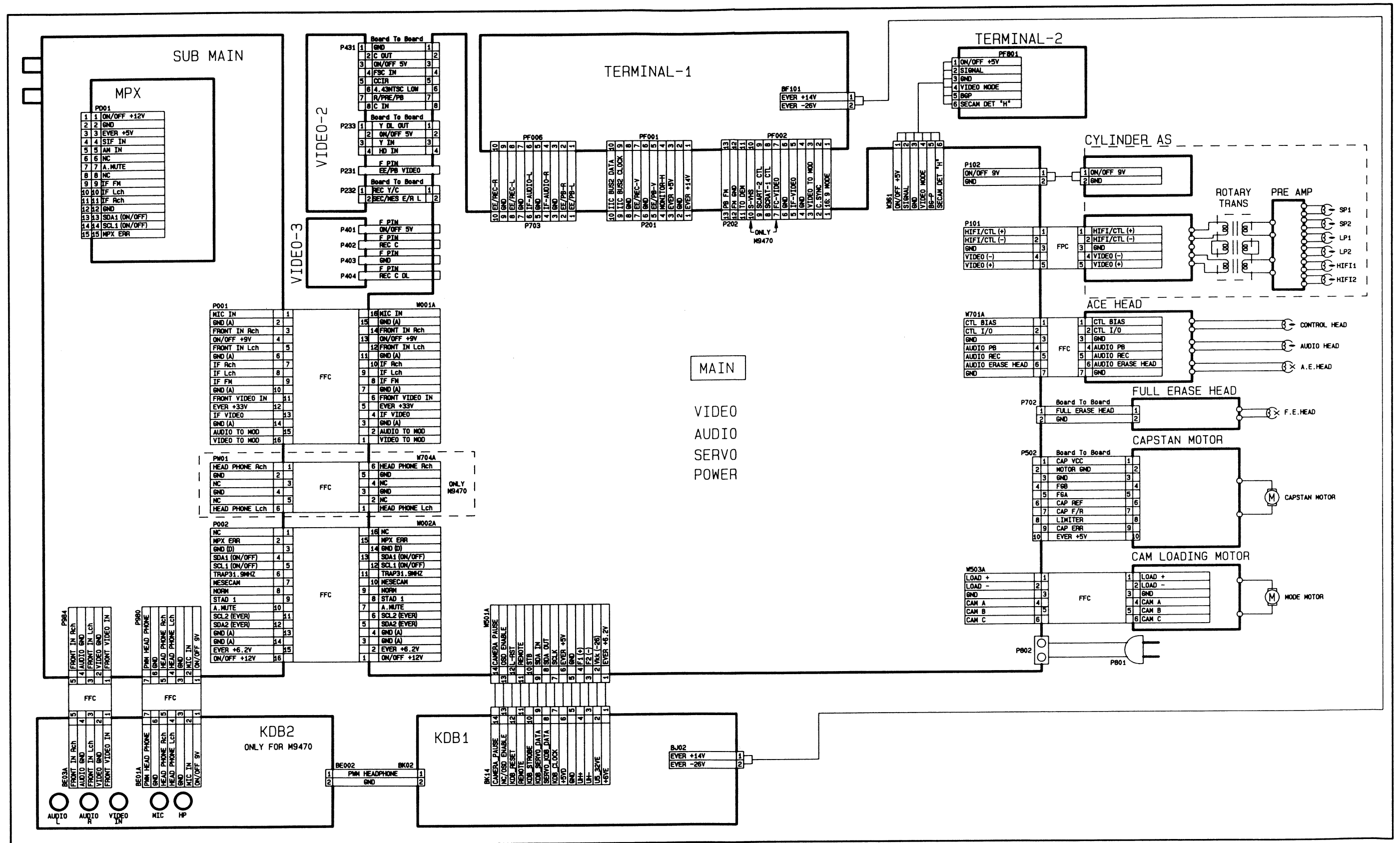
2.5 Audio signal processing (Main board) • Traitement audio (Platine principale)
Audio Signalteil (Hauptleiterplatte)

Nº:	Einstellung Item	Betriebs- art Mode & Signal	Meßmittel Eingangssignal Test Equipment Input Signal	Meßpunkt Testpoint	Einstell- Punkt Adjustment Point	Beschreibung Description
2.5.1	FM REC Current	REC AV1 without signal	Oscilloscope	Jumper JP912	None	Check for 1Vpp ± 0.2Vpp
	FM- Aufnahmestrom	ohne Signal	Oszilloskop	Brücke JP912	Kein Abgleich	1Vss ± 0.2Vpp überprüfen
2.5.2	REC - PB Check	REC / PB	Oscilloscope AF generator	Anode D930 and D931	None	1.) Record the Audio signal. Note the amplitude of the signal at D930 and D931 2.) Playback the recorded signal signal 3.) Confirm the same level at D930/ D931 as in REC mode.
	Aufnahme- Wiedergabe Test		Oszilloskop NF Generator			1.) Audio Signal aufzeichnen. Amplitude des Signals an D930/ D931 notieren. 2.) Aufgezeichnetes Signal wieder- geben. 3.) Gleiche Amplitude an D930/D931 wie in REC Mode messen.

Abbreviations / Abreviations / Abkürzungen

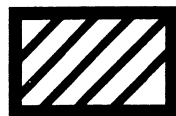
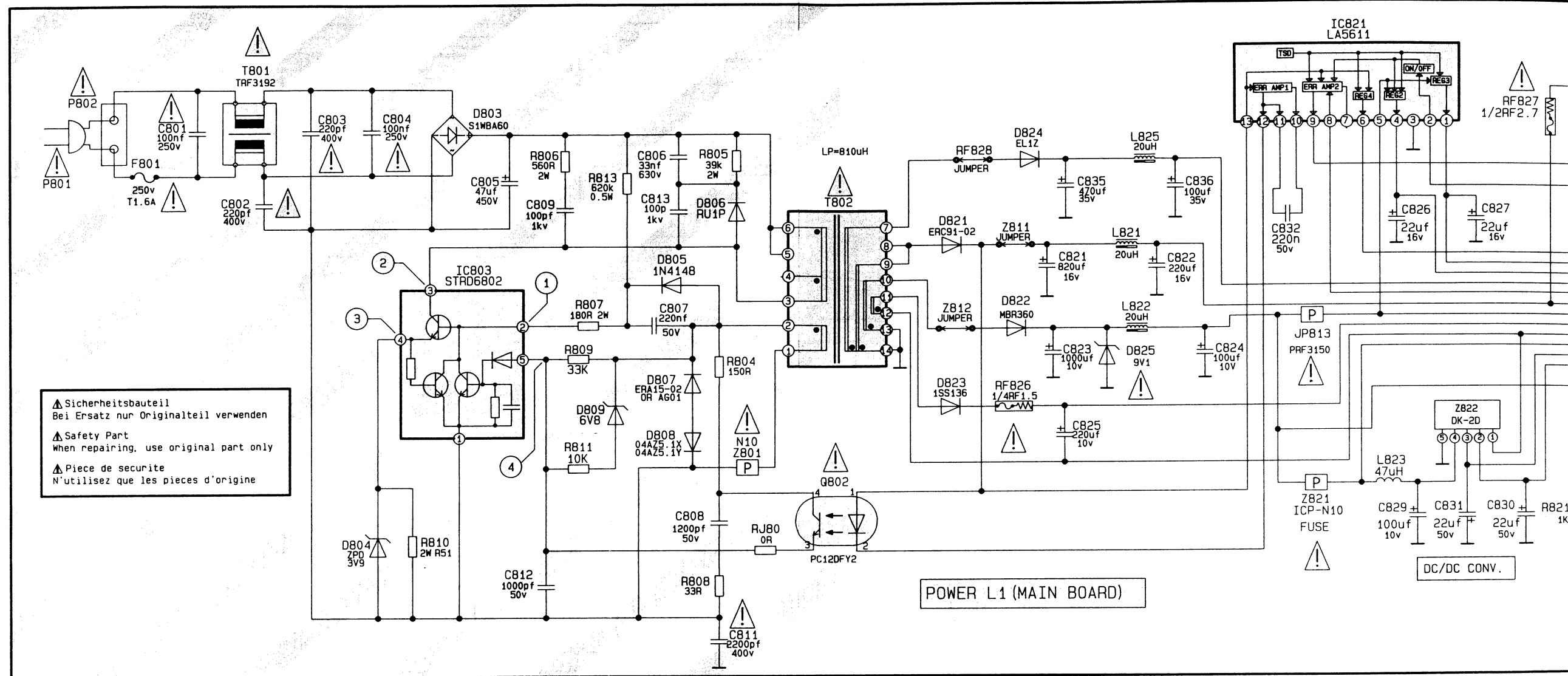
AC	Alternating Current	HPF	High Pass Filter
ACC	Automatic Color Control	I.R	Infra Red
ACK	Automatic Color Killer	ID	Identification
AD.REF	Analog/Digital Converter Reference	INP/IN	Input
AE	Audio Erase	KDB	Key Display Board
AFC	Automatic Frequency Control	LIM	Limiter
AGC	Automatic Gain Control	LP	Long Play
A_IF	Audio IF	LPF	Low Pass Filter
ALC	Automatic Level Control	MESECAM	Middle East Secam
AMP	Amplifier	NC	Noise Canceller
APC	Automatic Phase Control	OSD	On Screen Display
AP.CONT	Aperture Control	PB	Play Back
AV	Audio-Video	PB_C	Play Back Chroma
AV SWP	Audio/Video Switching Point (DRUM FF)	PCB	Printed Circuit Board
B.EMPH	Burst Emphasis	PDC	Program Delivery Control
B.DEEMPH	Burst Deemphasis	PG	Pulse Generator
BG	Burst Gate	PH	Pseudo Horizontal Synch
BID	Burst Identification	PIF	Picture IF
BLK	Blanking	PLL	Phase Locked Loop
BPF	Band Pass Filter	PS	Phase Switch
CAP	Capstan	PV	Pseudo Vertical Synch
CBC	Cable Box Control (Satellite Control)	PWM	Pulse Width Modulation
CCD	Charge Coupled Device	REC	Record
CH	Channel	REC_C	Record Chroma
CFG	Capstan Frequency Generator	REW	Rewind
CLK	Clock	REV	Reverse
COMP	Comparator	SCL	Serial Clock
CONV	Converter	SDA	Serial Data
CPWM	Capstan Pulse Width Modulation	SEC	SECAM
C-REG	Capstan Regulation	SU REEL	Supply Reel
CR	Color Rotary	SMPS	Switch Mode Power Supply
CS	Chip Select	SP	Standard Play
CSYNC	Composite Synch	SS	Synch Separator
CTL	Control	SW	Switch
DC	Direct Current	TU REEL	Take Up Reel
D.LIM	Double Limiter	TMB	Terminal Board
DEEMPH	Deemphasis	VCA	Voltage Controlled Amplifier
DET	Detector	VCO	Voltage Controlled Oscillator
D-FG	Drum Frequency Generator	VCR	Video Cassette Recorder
DFF	Drum Flip Flop	VD	Supply Voltage Digital
DIF.EQ	Differential Equalizer	VE	Voltage (Ever)
DIG	Digital	V_ENV	Video Envelope
DLY	Delay	V_IF	Video IF
DOC	Drop Out Compensation	VS	Voltage (Switched)
E-E	Electronic-Electronic	VM	Motor Voltage (Drum & Loading motor)
EMPH	Emphasis	VMC	Motor Voltage (Capstan motor)
ENV	Envelope	VPS	Video Program System
EP	Extended Play	W/D	White/Dark
EQ	Equalizer	Y/C	Luminance/Chrominance
F.E	Full Erase		
F.REW	Fast Rewind		
F.FWD	Fast Forward		
F/R	Forward/Rewind		
FCB	Front Connection Board		
FF	Fast Forward		
FG	Frequency Generator		
FMCI	FM Carrier Interleave		
FWD	Forward		
GND	Ground		
GCA	Gain Controlled Amplifier		
HASEL	Head Amplifier Select		
HAB	Head Amplifier Board		
HD	Horizontal Synch Pulse		





**Components location • Localisation des elements • Lage der Bauteile • Localizzazione degli elementi
Localizacion los componentes**

RI..		R2..		R4..		R5..		R6..		R9..		RJ..		C...		C2..		C5..		C7..		IC...		QI..		Q5..			
RI01	C4	R201	B1	R401	B1	R501	D2	R601	D3	R920	F2	RJ05	D3		CI01	F3	C201	B 2/3	C501	F3	C701	E1	IC101	D1	QI03	D3	Q506	B3	
RI02	F3	R202	B1	R402	B1	R502	E3	R602	F3	R921	F2	RJ06	D3		CI02	B3	C202	B1	C505	E4	C702	E1			QI04	C3	Q507	B3	
RI03	E4	R203	B1	R403	B1	R503	E3	R604	F3	R922	F2	RJ11	B1		CI03	E4	C203	B1	C507	E3	C704	E1	IC218	D1	QI05	D3	Q513	E4	
RI04	C4	R204	B2	R404	B2	R504	E3	R605	F4	R923	F2	RJ12	C1				C205	B1	C508	E3	C705	E1					Q514	E3	
RI05	E4	R205	B2	R405	B1	R505	E3	R606	E4	R924	F2	RJ13	B2		C095	F1	C207	B1	C509	E3	C707	E1	IC264	B2			Q510	D2	
RI06	D3	R206	B2	R406	B1	R506	E3	R607	E4	R925	F2	RJ14	B2		C097	F1	C208	B2	C510	E3	C709	E2	IC266	C1	Q1..		Q511	C/D 2	
RI07	C4	R207	B2	R411	B2	R507	E3	R621	C2	R926	F2	RJ15	E1				C209	B2	C511	D2	C714	E1	IC416	C1			Q521	C2	
RI08	E4	R208	B2	R412	C1	R508	E3	R622	C2	R927	F2	RJ16	D1		C808	A3	C210	B2	C514	E3	C715	E1	IC418	C1					
RI09	C4	R209	D1	R413	C1	R509	E3	R615	E4	R928	F2	RJ17	D1		C812	A3	C212	D1	C515	E3	C716	E1	IC481	B2	Q131	D2			
RI10	C4	R210	D1	R414	B1	R510	E3			R929	F2	RJ21	B1				C213	D1	C516	E3	C726	E2			Q132	D2			
RI11	C4	R211	D1	R415	B1	R511	E3			R930	F2	RJ22	B1		C946	F3	C221	B1	C517	E3	C727	E2			Q133	E1	Q...		
RI12	C3	R213	B2	R416	B1	R512	D3	R7..		R931	F2	RJ23	B1		C947	F2	C223	D1	C519	E3	C728	E2			Q134	E1			
RI13	C3	R214	B1	R417	B1	R513	C2			R932	F2	RJ24	B1		C969	F1	C225	B2	C521	E3	C740	F2			Q135	E1			
RI14	C3	R215	B1	R418	B1	R514	F3			R933	F2	RJ27	B1		C970	F1	C226	B2	C523	C 2/3	C760	E1			Q198	B2			
RI15	D3	R216	B2	R420	B1	R515	C2	R701	E1	R934	F2	RJ28	E2		C972	E1	C227	B2	C524	C3	C761	F3	IC920	F1			Q772	E2	
		R217	B2	R421	B1	R516	F3	R702	E1	R935	F2	RJ30	B2		C975	F1	C261	B2	C525	C3	C762	F3					Q773	E2	
		R218	B1	R422	C1	R517	C2	R703	E1	R936	F2	RJ31	B2		C978	E2	C262	D1	C527	C2	C763	F3					Q975	E1	
		R219	B1	R423	C1	R518	C3	R704	E1	R938	F2	RJ32	E1		C979	E2	C263	B1	C528	C2			D...		Q211	D1			
		R221	B1	R425	C1	R519	F3	R705	E1	R939	E3	RJ33	B2				C264	D1	C529	D2					Q212	E1			
		R222	B/C 1	R426	C1	R520	D2	R706	E1	R942	F2	RJ34	D1				C265	D1	C530	D2			D199	B1	Q213	B2			
		R223	B2	R429	B1	R522	D2	R707	E2	R943	F2	RJ35	B2		C1..		C266	B1	C531	D2					Q214	C1			
		R224	B2	R432	C1	R523	C2	R714	E1	R946	F3	RJ39	C1		C101	D1	C267	C1	C532	D2					Q215	B 1/2			
		R225	B2	R442	C1	R524	D2	R716	E1	R947	F3	RJ42	C1		C102	D1			C533	D2					Q216	B2			
		R226	B2	R461	B1	R525	D2	R717	E1	R948	F3	RJ43	B1		C103	D1			C535	D2					Q217	B2			
		R227	B3	R471	D1	R526	D2	R718	E2	R963	E/F 2	RJ44	B/C 1		C104	D1			C536	D2					Q261	B2			
		R228	B2	R472	D1	R527	C2	R719	E2	R964	F 2	RJ45	C1		C107	E1			C537	D2					Q262	B2			
		R229	B1	R475	E1	R528	C2	R733	E2	R965	E2	RJ46	B/C 1						C538	E4					Q263	B2			
		R240	B1	R476	E1	R529	C2	R734	E2	R970	E2	RJ47	C2		C109	D2			C539	E4					Q291	B2			
		R241	D1	R477	E1	R530	D2	R740	F2	R973	F1	RJ48	C2		C110	D/E 2			C540	E4					Q292	B2			
		R261	B2	R478	E1	R531	D2	R741	F2			RJ49	C2		C112	D1			C541	E4									
		R262	B2	R479	C1	R532	C2	R760	E1	R975	E2	RJ52	F3		C113	D1			C542	F4									
		R263	B2	R480	D1	R533	D3	R761	E1	R976	E1	RJ53	C3		C114	D1			C543	D3									
		R264	B2	R481	C2	R534	D3	R762	E1	R977	E1	RJ54	D3		C115	D1			C544	E3									
		R265	B2	R482	C1	R535	D3	R763	F3	R978	F1	RJ61	F3		C116	D1			C547	C3									
		R266	B2	R483	E1	R536	E3	R764	F3			RJ62	F3		C117	D2			C562	E3									
		R267	B2	R497	C1	R537	F4	R765	F3			RJ80	A3		C119	D2			C563	E3									
		R268	B2	R498	C1	R538	F4	R766	F4			RJ81	B4		C120	D1			C564	D2									
		R269	B2	R499	C1	R541	C4	R770	E1			RJ90	D2		C121	D/E 1			C566	D3									
		R270	B2			R542	C3	R771	E2						C122	D/E 1			C567	D3									
		R271	D1			R543	A4	R772	E2									C421	B1	C575	E3								
		R273	C1			R544	C4	R773	E2									C422	B1	C576	F3								
		R274	C2			R545	C4	R774	E2									C424	C1										
		R275	B/C 1			R546	C4	R775	E/F 2									C429	B1										
		R276	B/C 1			R547	E4	R777	E2									C443	C1										
		R277	B1			R548	F4	R782	E2									C461	B1										
		R291	B2			R549	F4	R783	E2									C462	B1										
		R292	B2			R561	E4	R784	E2									C471	D1										
		R293	B2			R562	E4	R789	E2									C472	D1										
						R563	D3	R790	E2									C473	D1										
						R564	F4	R791	E2									C474	D1										
						R565	E4	R792	E2									C476	D1										
						R570	C3	R793	E2									C478	E1										
						R571	C3	R794	F2									C479	E1										
						R572	D2											C480	D1										
						R573	D3											C481	D1										
						R574	E4											C484	D1										
						R575	E3											C485	D1										
						R580	C2											C487	D1										
						R581	C2											C489	D1										
						R590	B3	R804	A3									C490	D1										
						R592	D3	R808	A3									C491	C1										
						R594	C3	R814	A4									C498	D1										
						R595	C3	R820	A4									C499	B1										
						R596	B3	R821	A4																				
						R597	C4																						
						R598	B3																						
						R599	C3																						



Part of board connected to mains supply.
Partie du chassis reliée au secteur.
Primärseite des Netzteiles.

Important note !

Repairs on SM line section are to be carried out only with isolating transformer.
Measure all voltages and oscillograms on the primary side of the line section only against primary line section ground!
If not otherwise noted, all DC-voltages and oscillograms are measured during STOP mode.

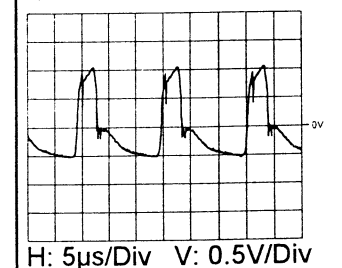
Note importante !

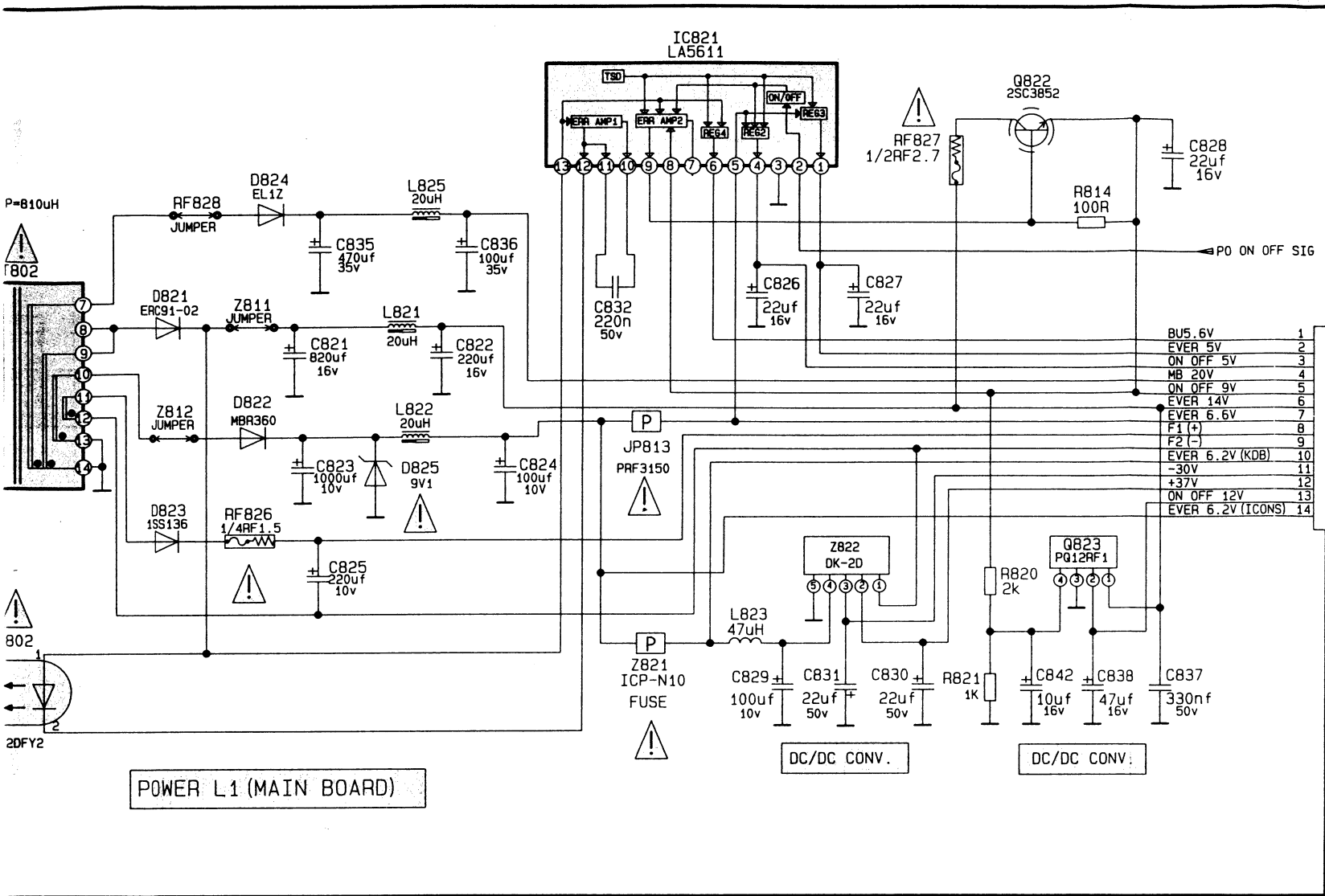
N'effectuer les travaux de maintenance sur la partie reliée au secteur (switch mode) qu'au travers d'un transformateur d'isolement.
Utiliser la masse primaire pour mesurer les tensions et les oscillogrammes de la partie reliée au secteur.
Les tensions continues et les oscillogrammes sont relevés en mode STOP, sauf indication contraire.

Wichtiger Hinweis !

Service-Arbeiten am SM-Netzteil nur über Regeltrenntrafo durchführen.
Alle Spannungen und Oszillogramme auf der Primärseite des Netzteiles nur gegen die Primärmasse messen!
Wenn nicht anders angegeben, sind die Gleichspannungen und Oszillogramme im STOP-Betrieb gemessen.

(1) Pin 2 IC803





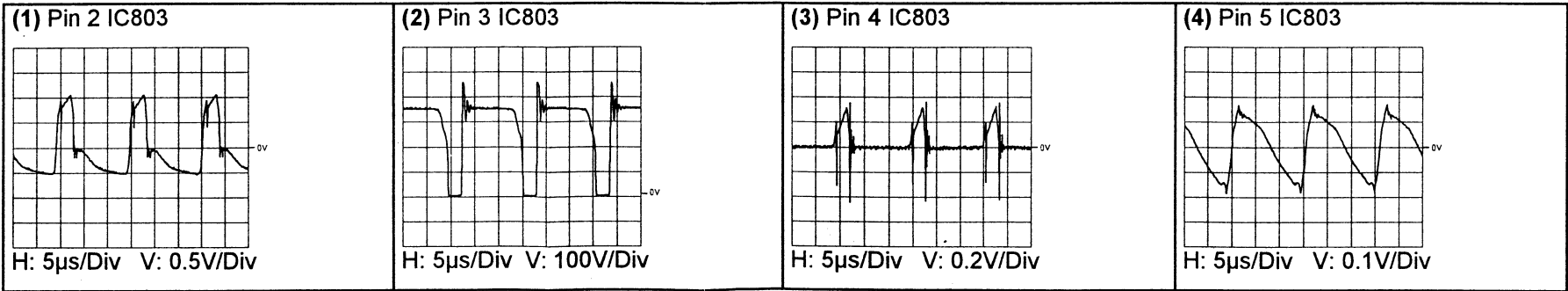
Z822	Value
1	23.5V
2	38.7V
3	27.0V
4	6.5V
5	0V

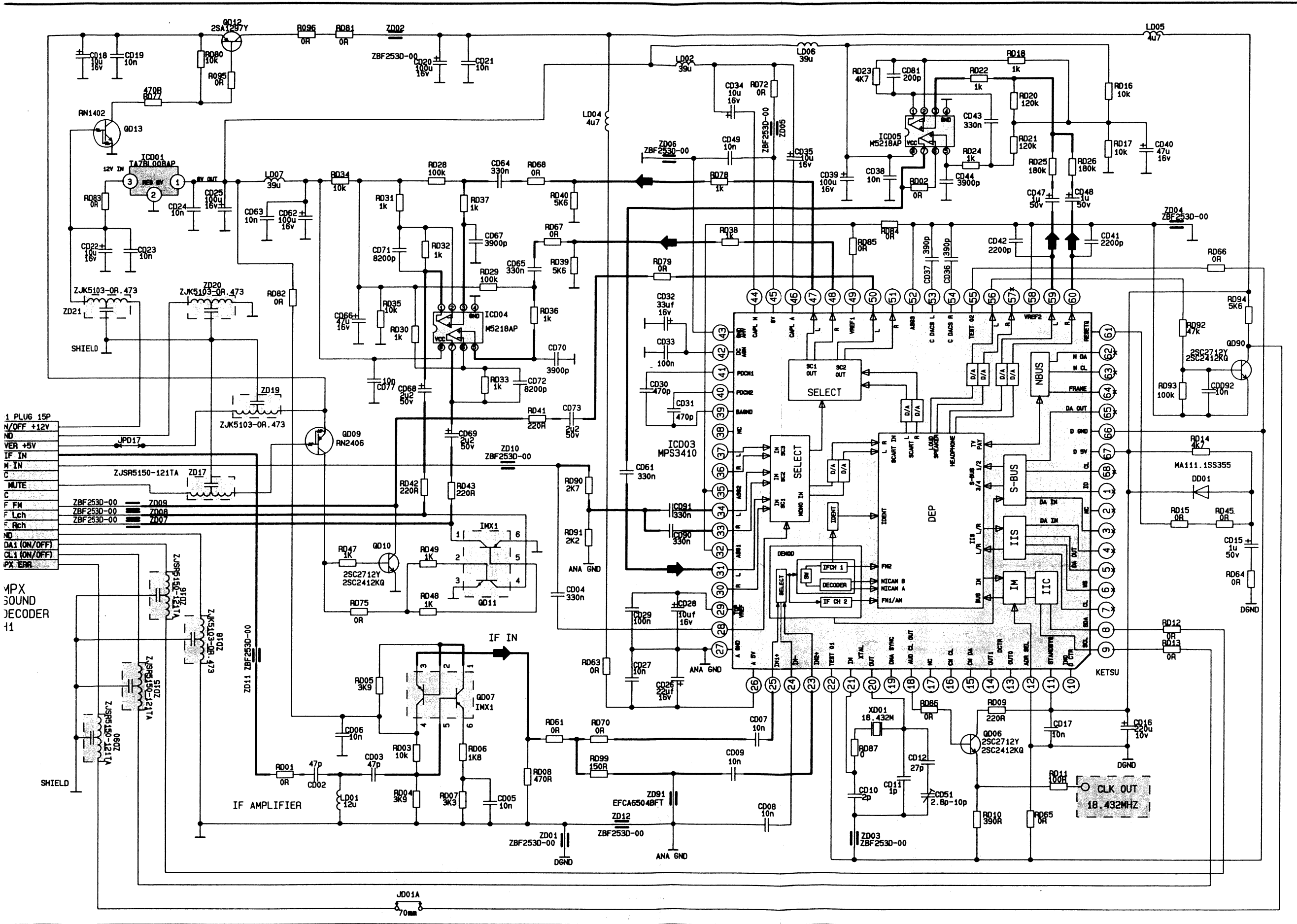
Q823	Value
1	13.7V
2	12.0V
3	0V
4	2.9V

IC821	Value
1	5.0V
2	0V
3	0V
4	5.0V
5	6.5V
6	5.6V
7	1.2V
8	8.8V
9	9.4V
10	1.2V
11	12.2V
12	12.8V
13	13.8V

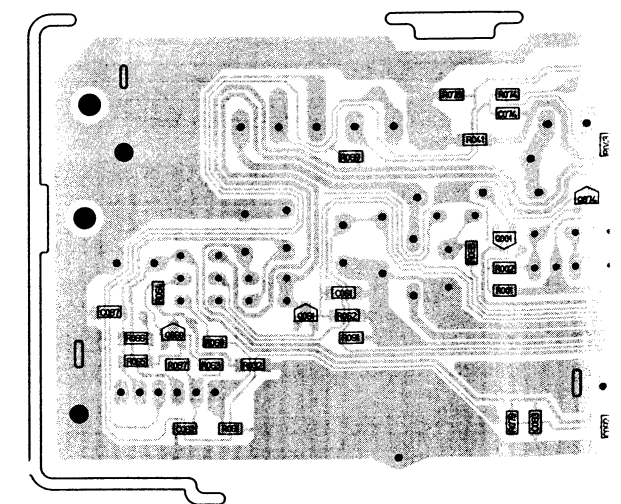
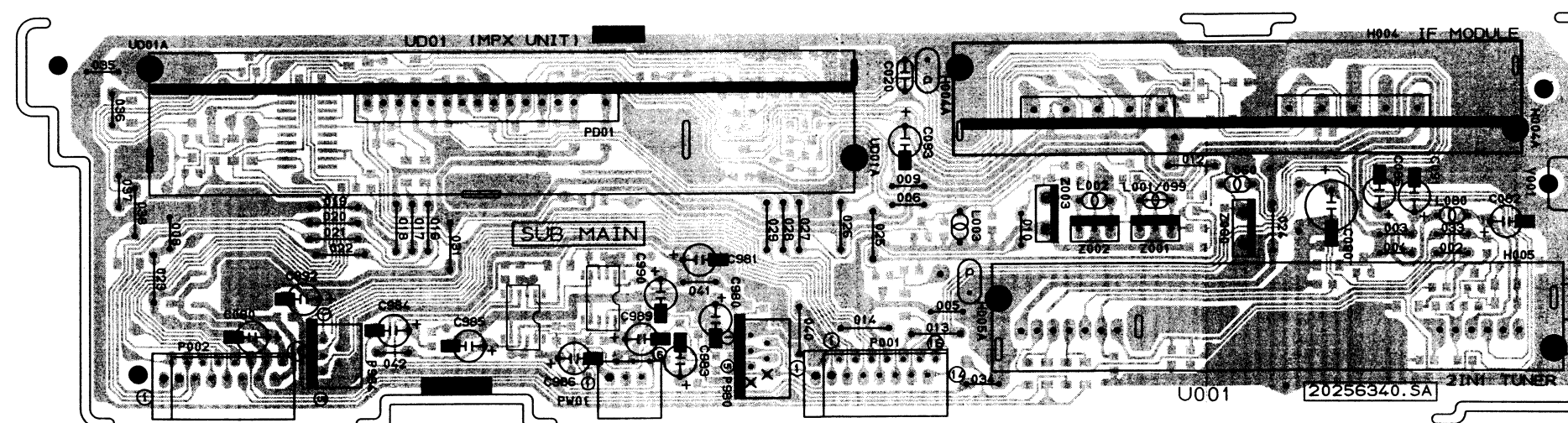
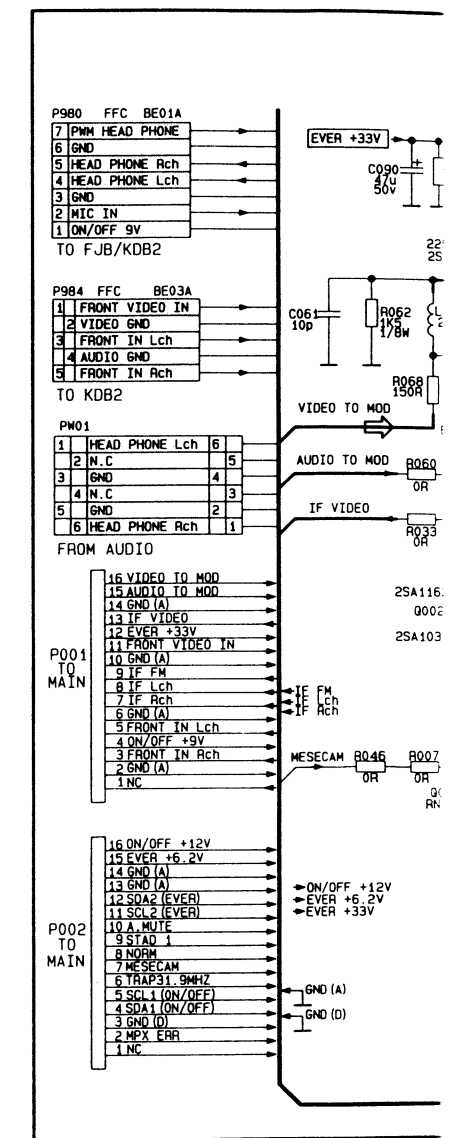
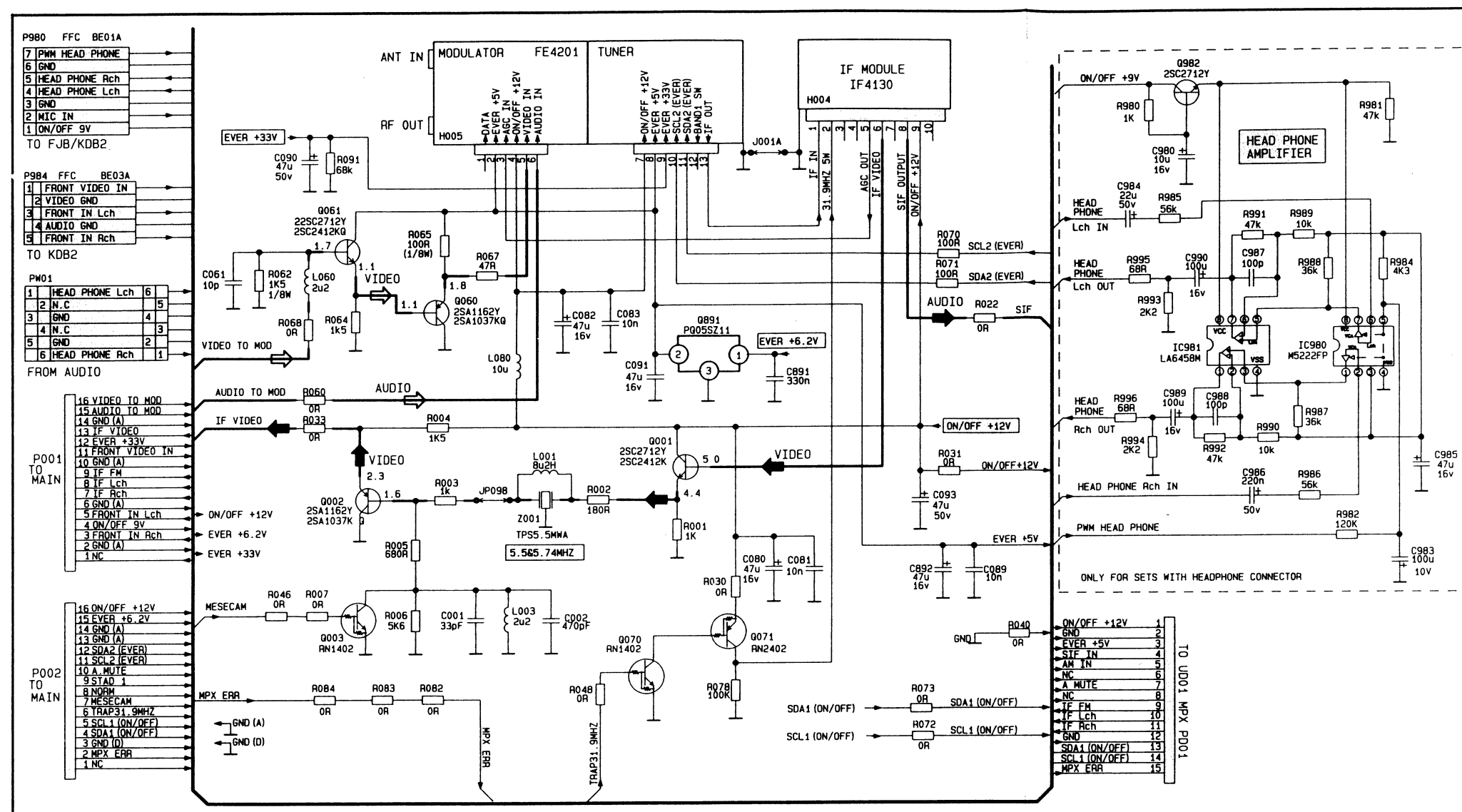
isolating transformer.
of the line section only against
measured during STOP mode.
au secteur (switch mode) qu'au travers
oscillogrammes de la partie reliée au
en mode STOP, sauf indication contraire.

durchführen.
es Netzteil nur gegen die Primärmasse messen!
und Oszillogramme im STOP-Betrieb gemessen.

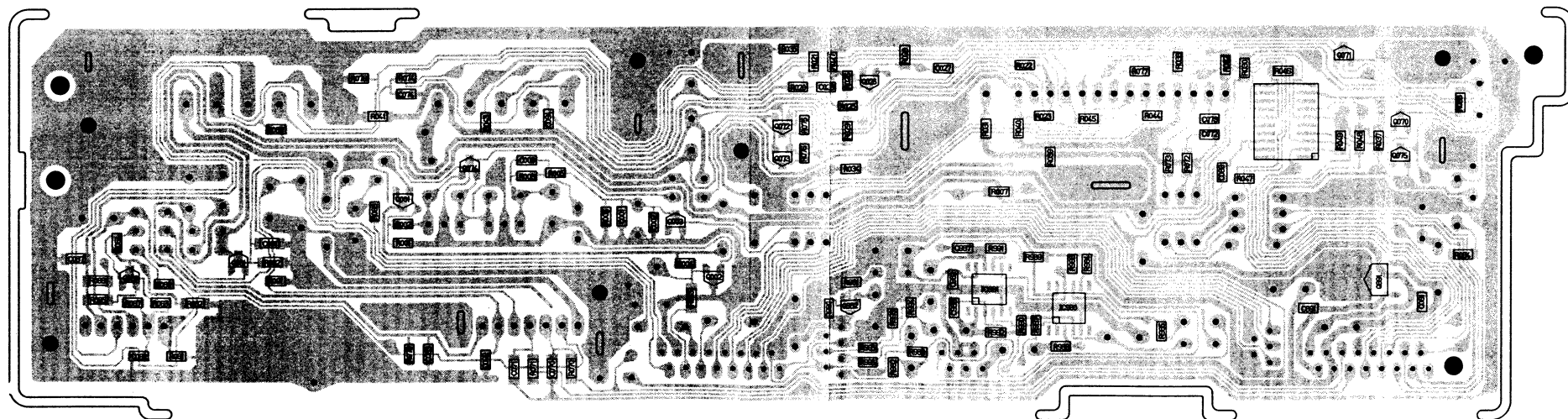
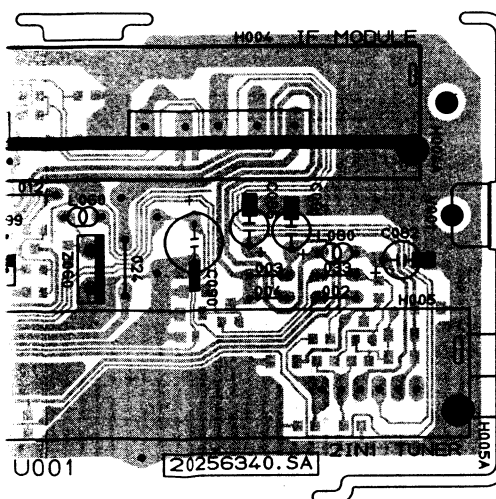
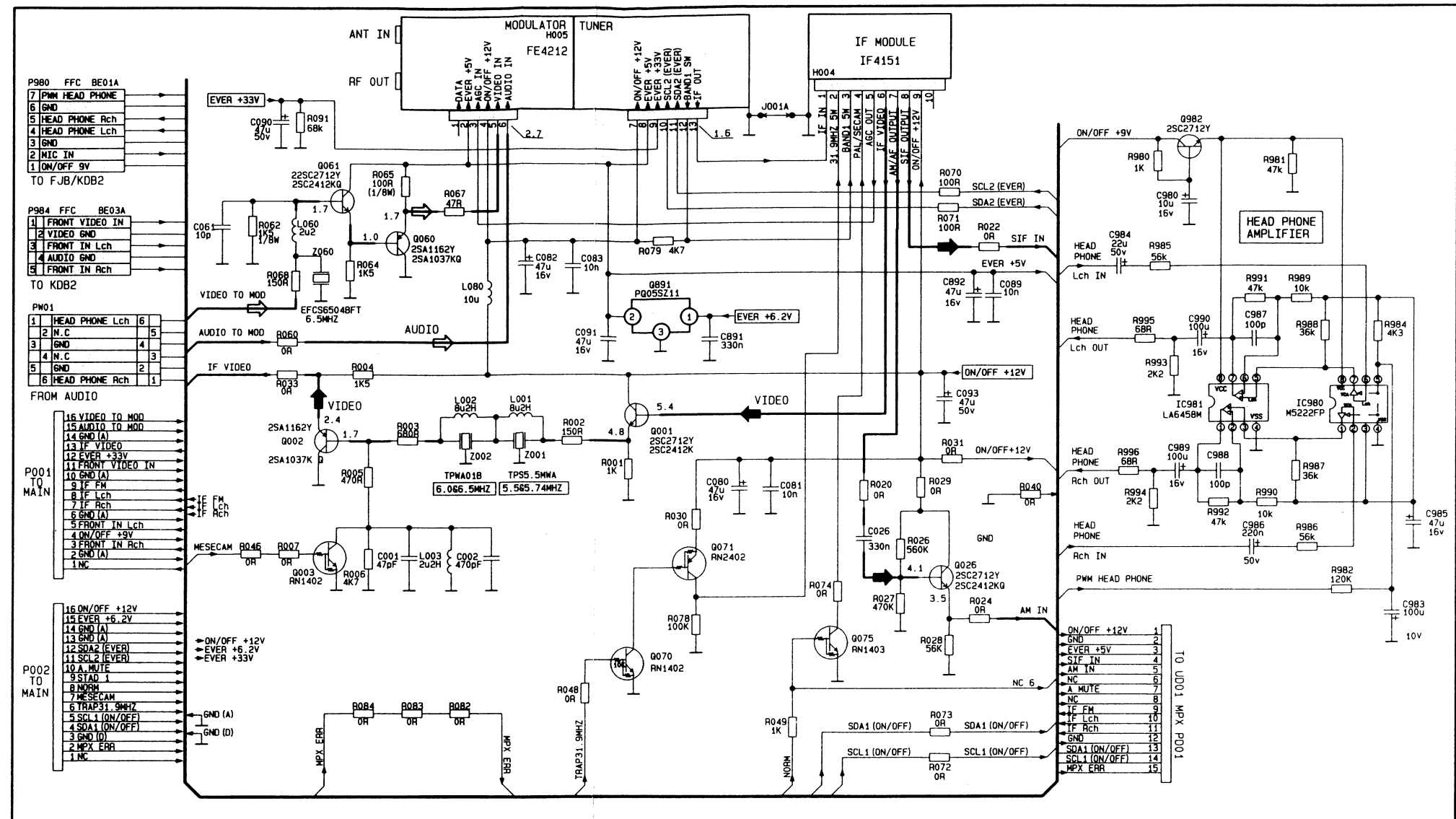
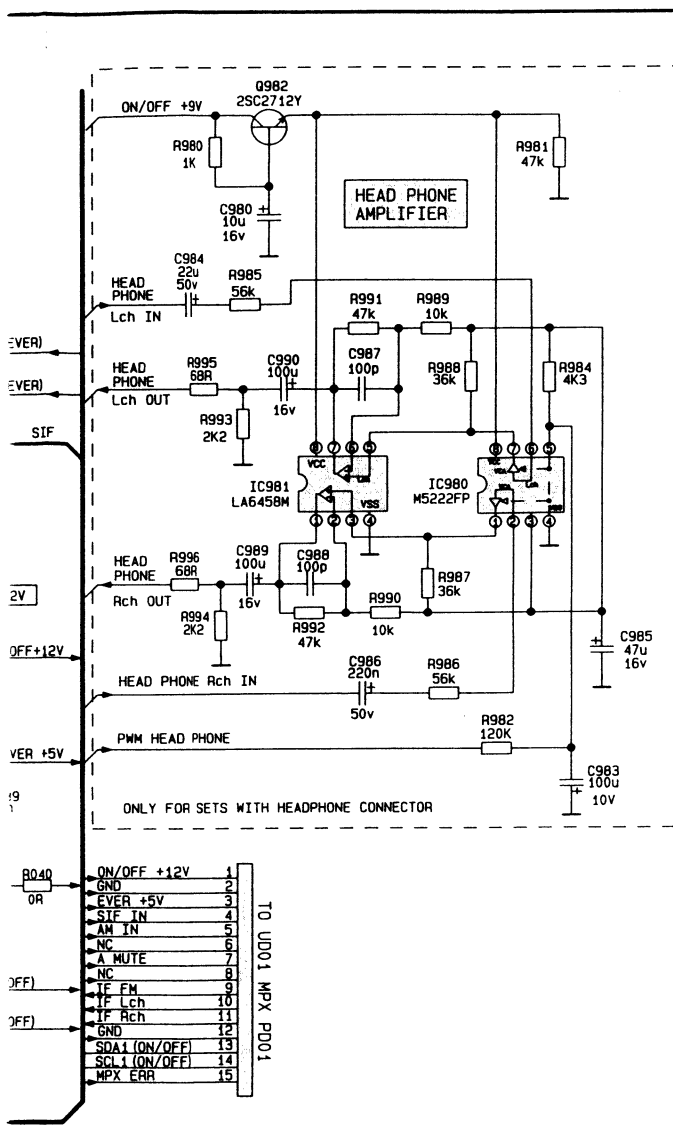


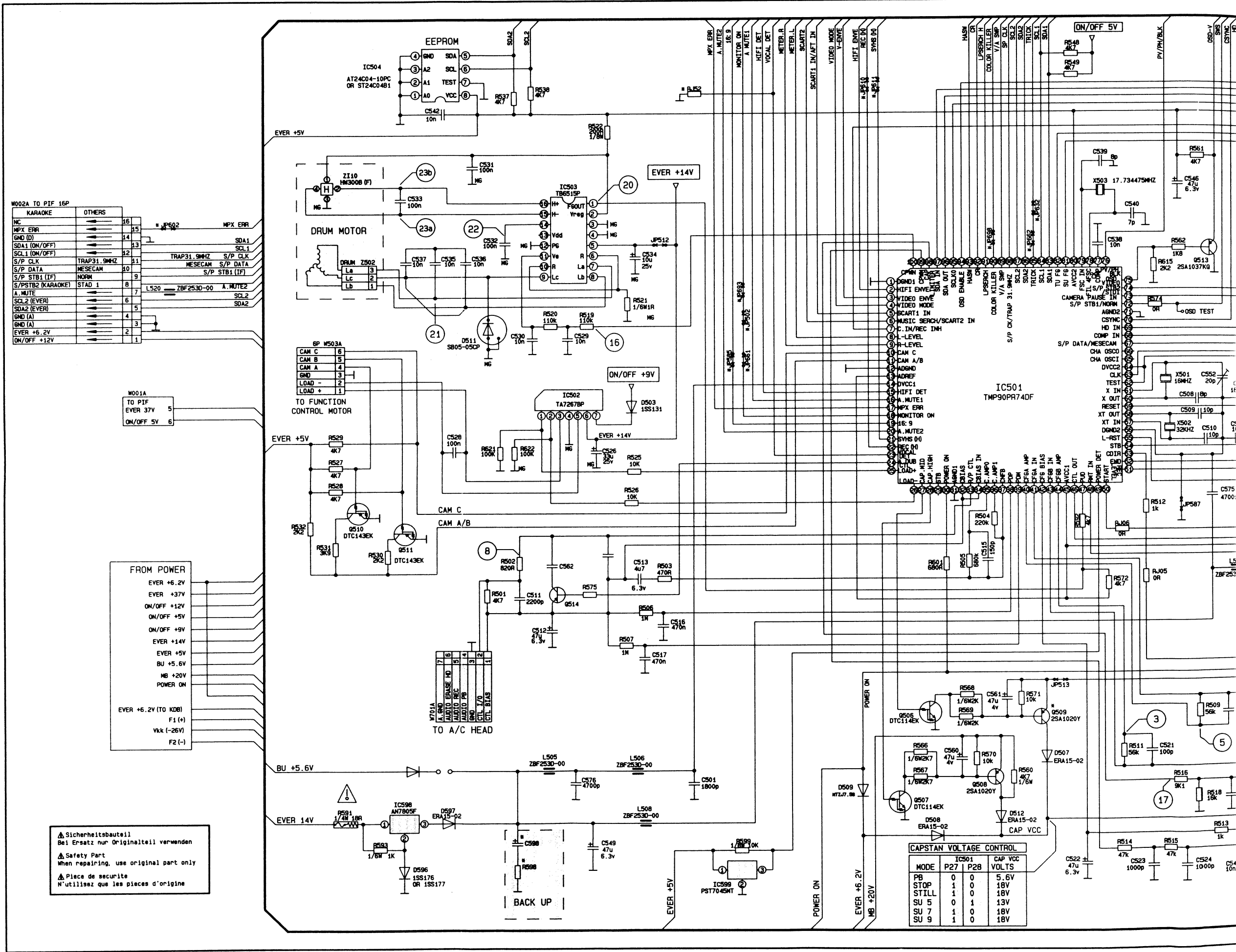


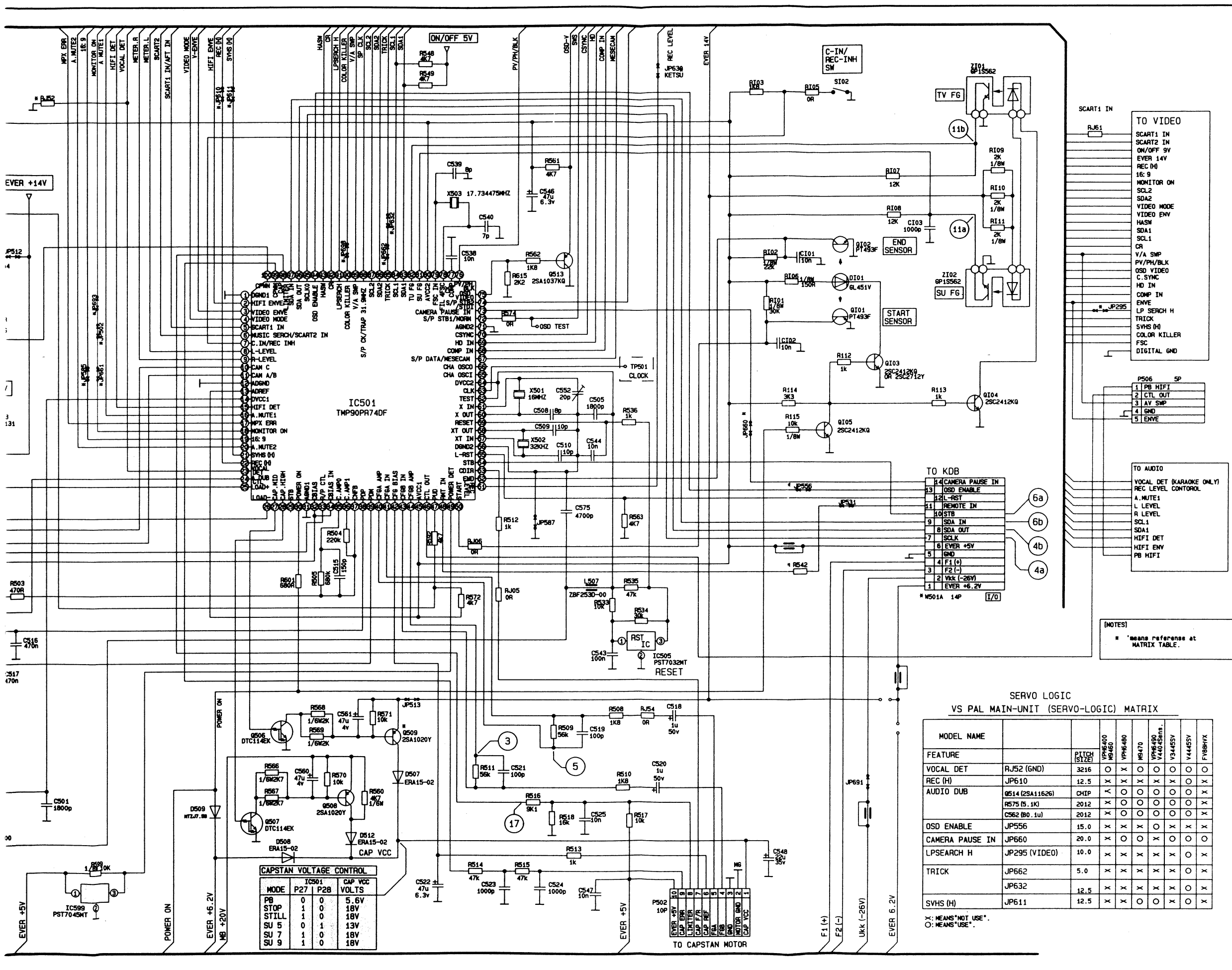
Tuner/modulator (BG/L/DK) / IF
Tuner/modulatore (BG/L/DK) / FI

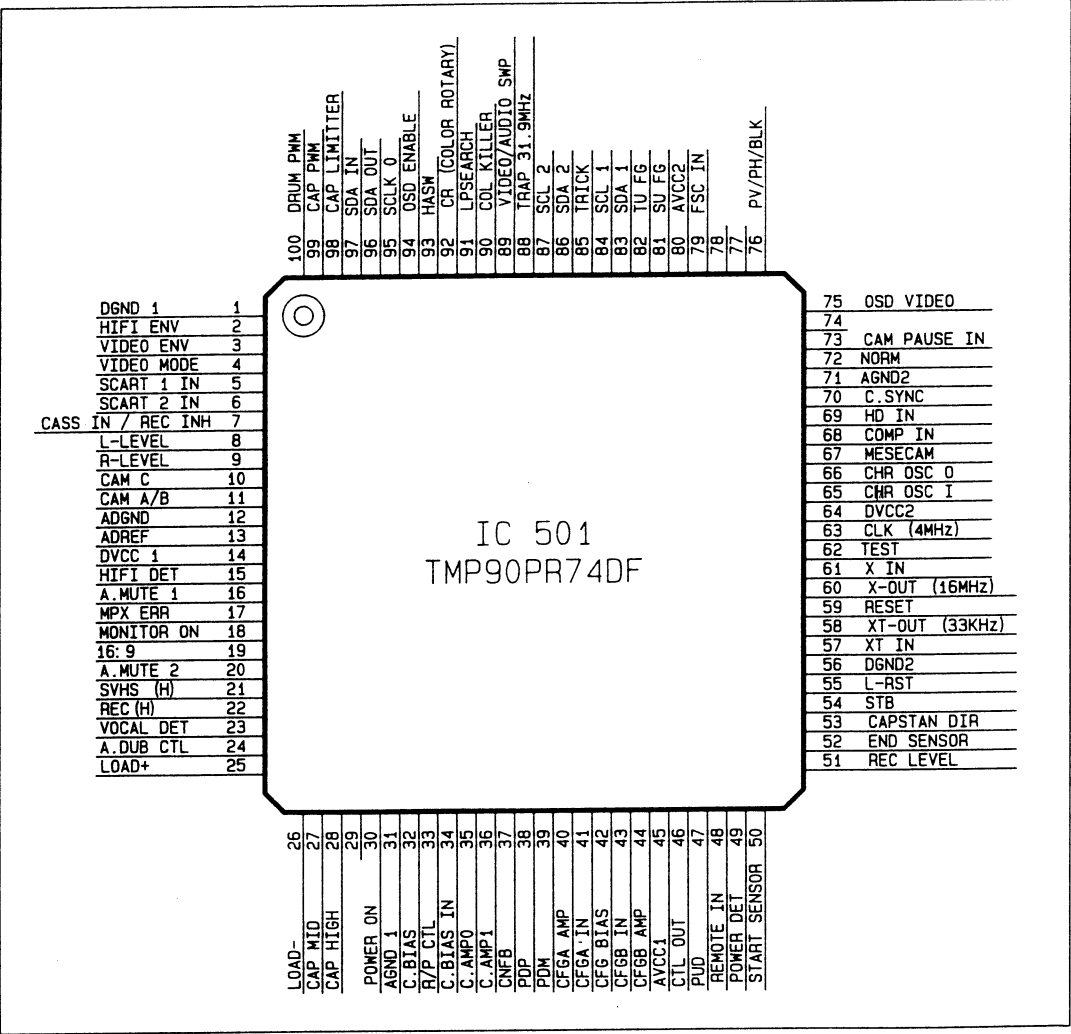
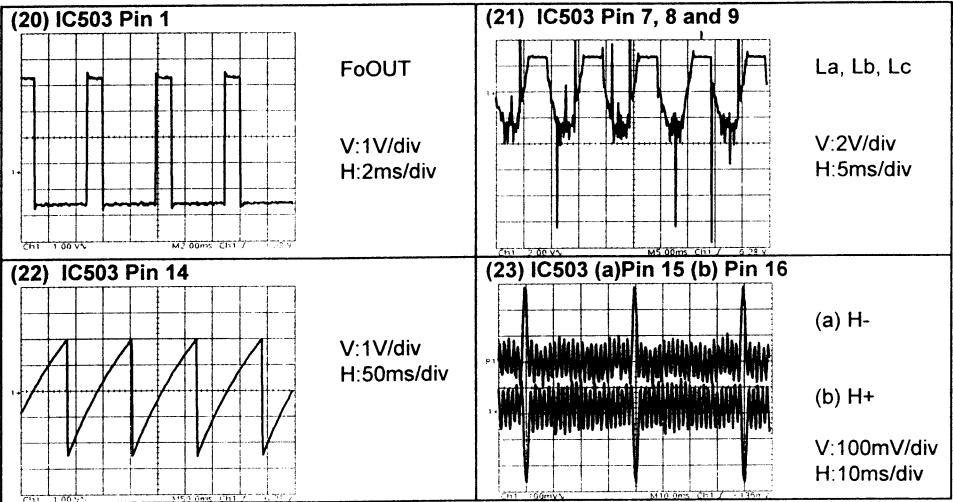
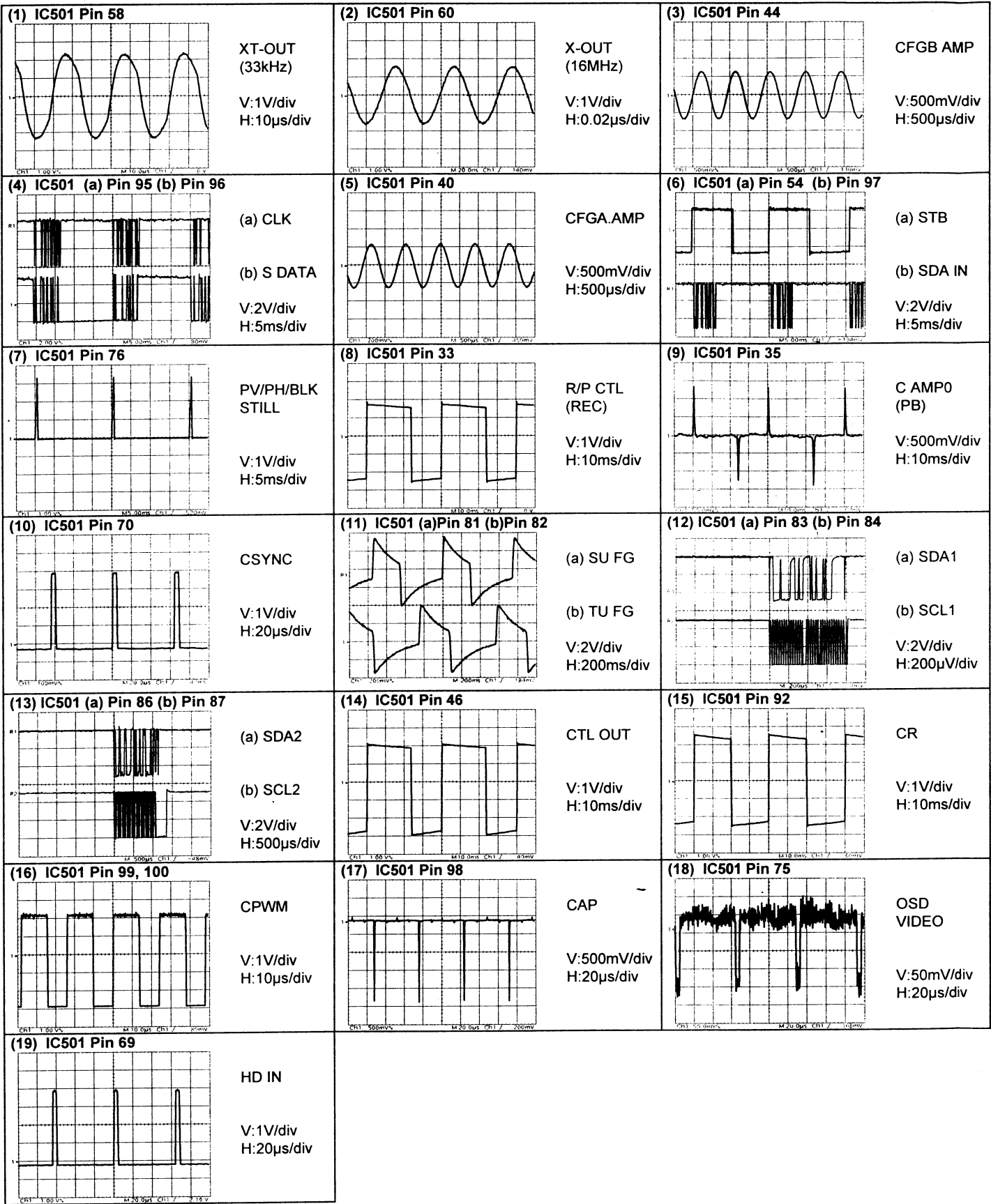


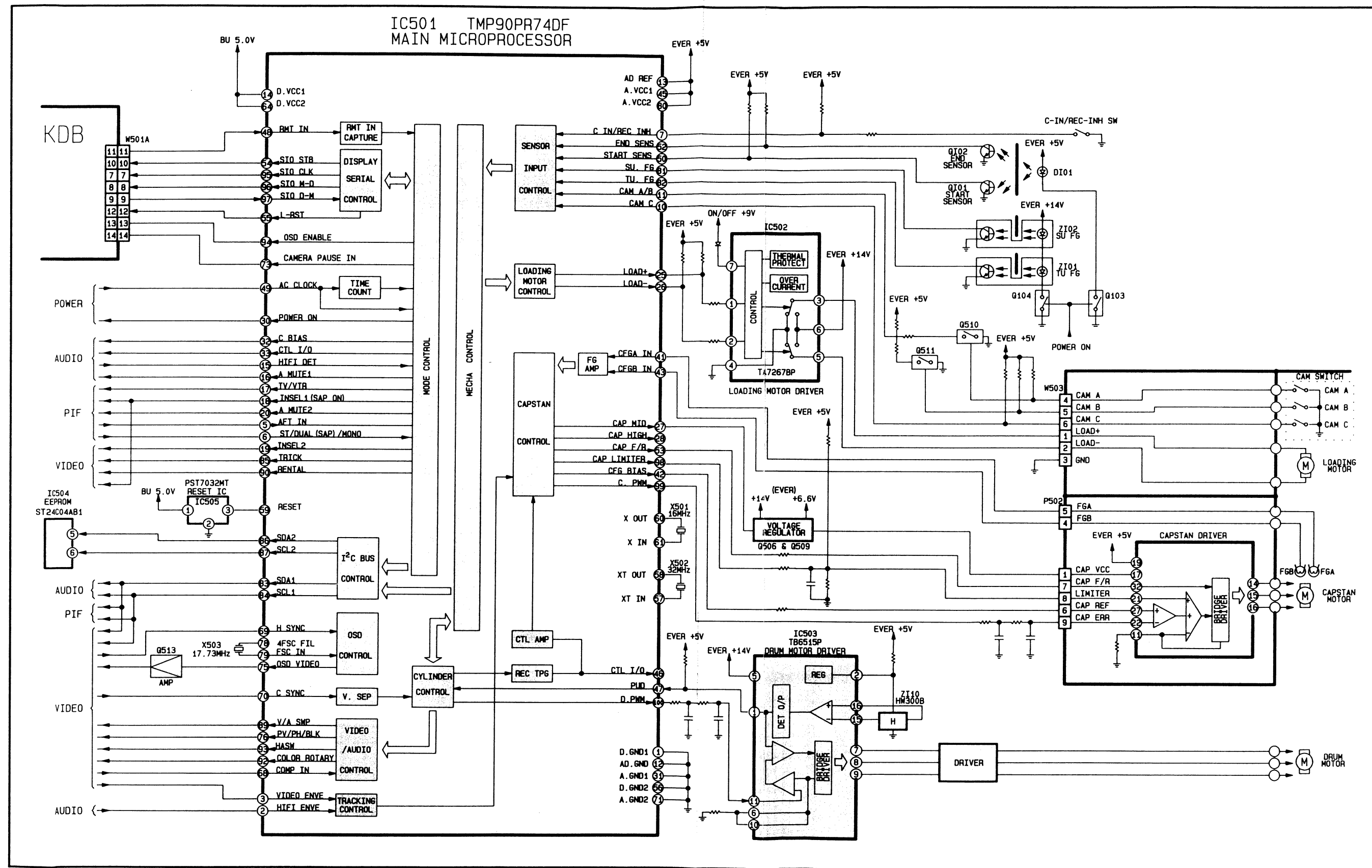
Tuner/modulator (BG/L/DK) / IF section (BG/L/DK) • Tuner/modulateur (BG/L/DK) / FI (BG/L/DK) • Tuner/Modulator (BG/L/DK) / ZF (BG/L/DK)
Tuner/modulatore (BG/L/DK) / FI (BG/L/DK) • Tuner/modulador (BG/L/DK) / FI (BG/L/DK)



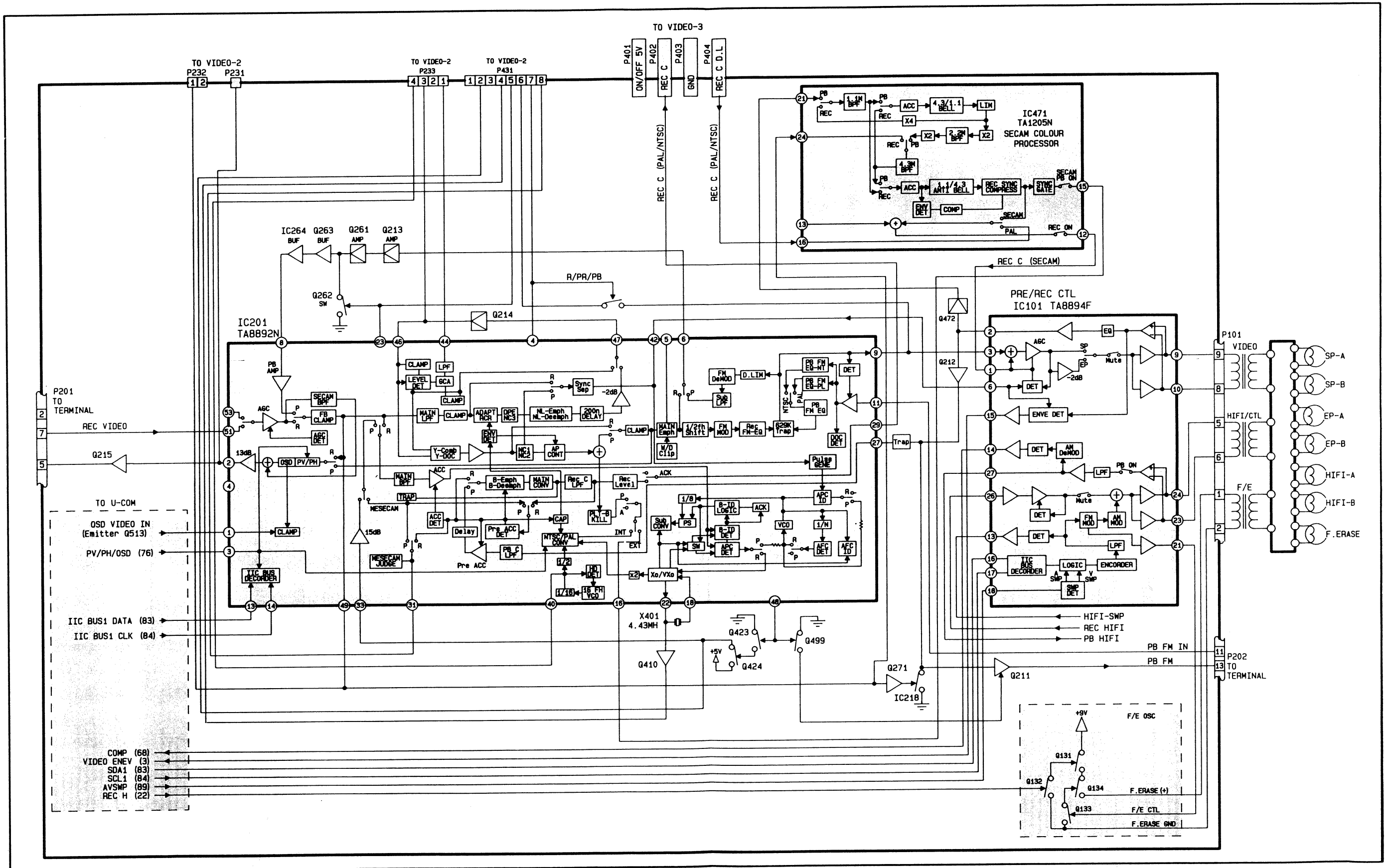


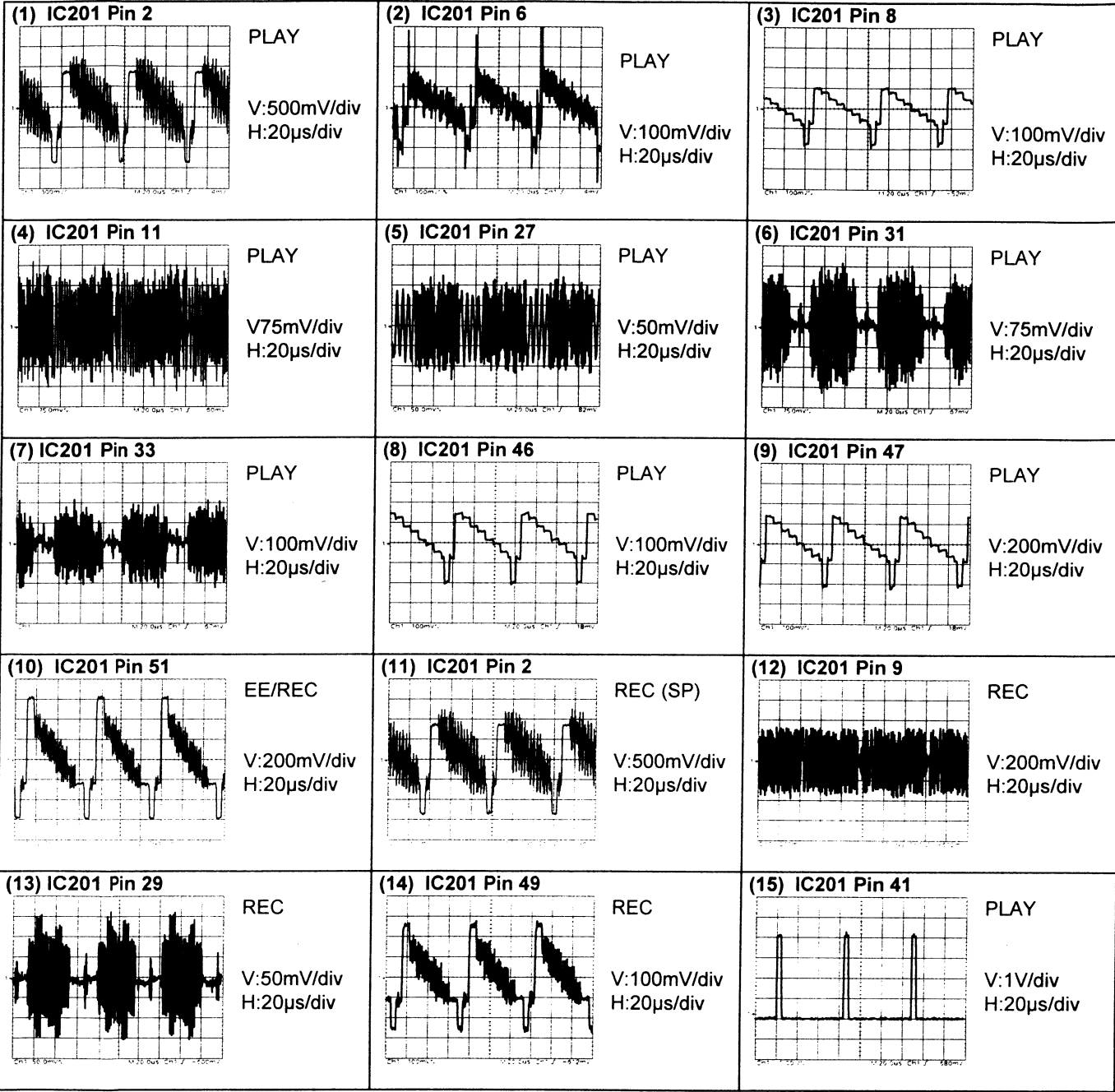






Block diagram video signal processing • Schéma synoptique traitement video • Blockschaltbild Video Signalverarbeitung
 Schema a blocchi elaborazione video • Esquema de bloques tratamiento video

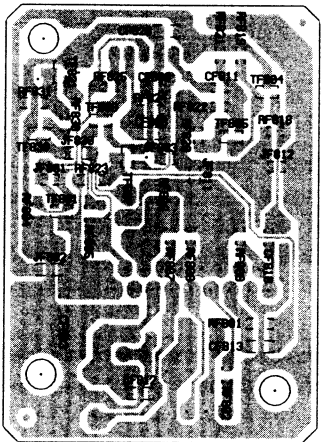
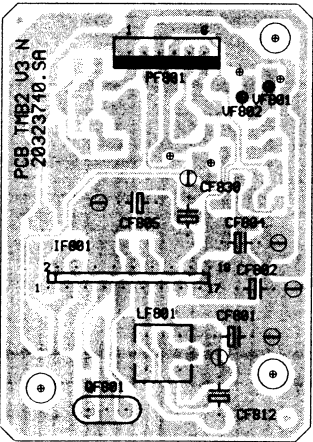
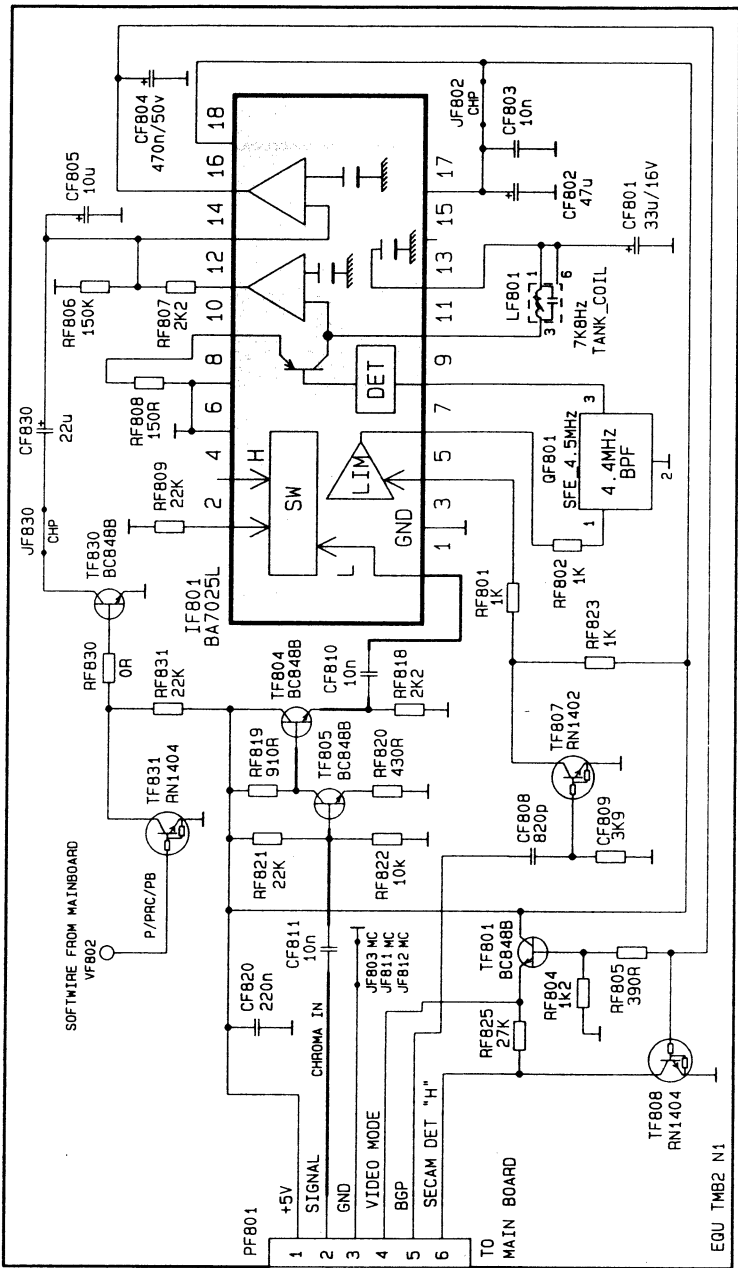


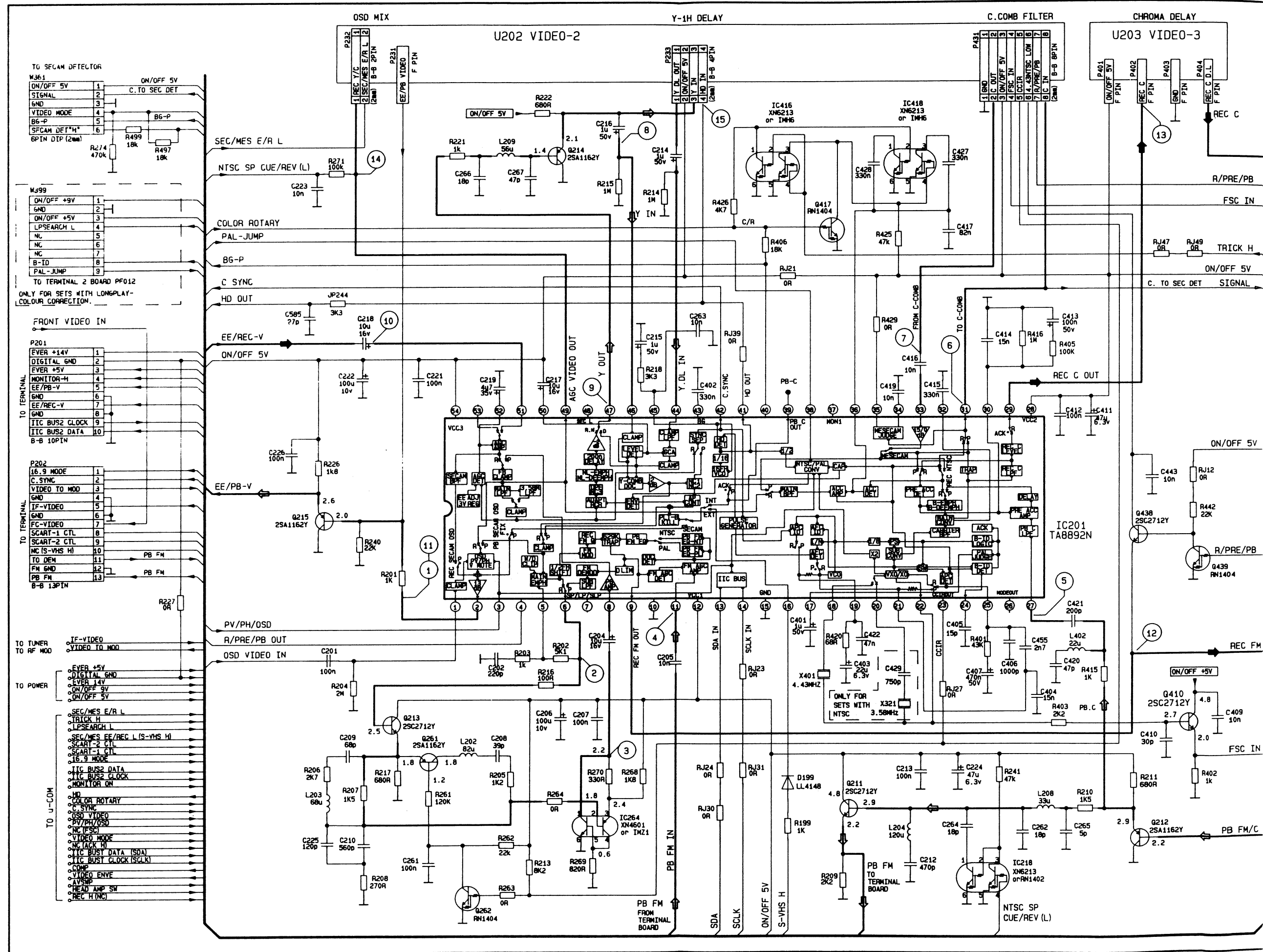


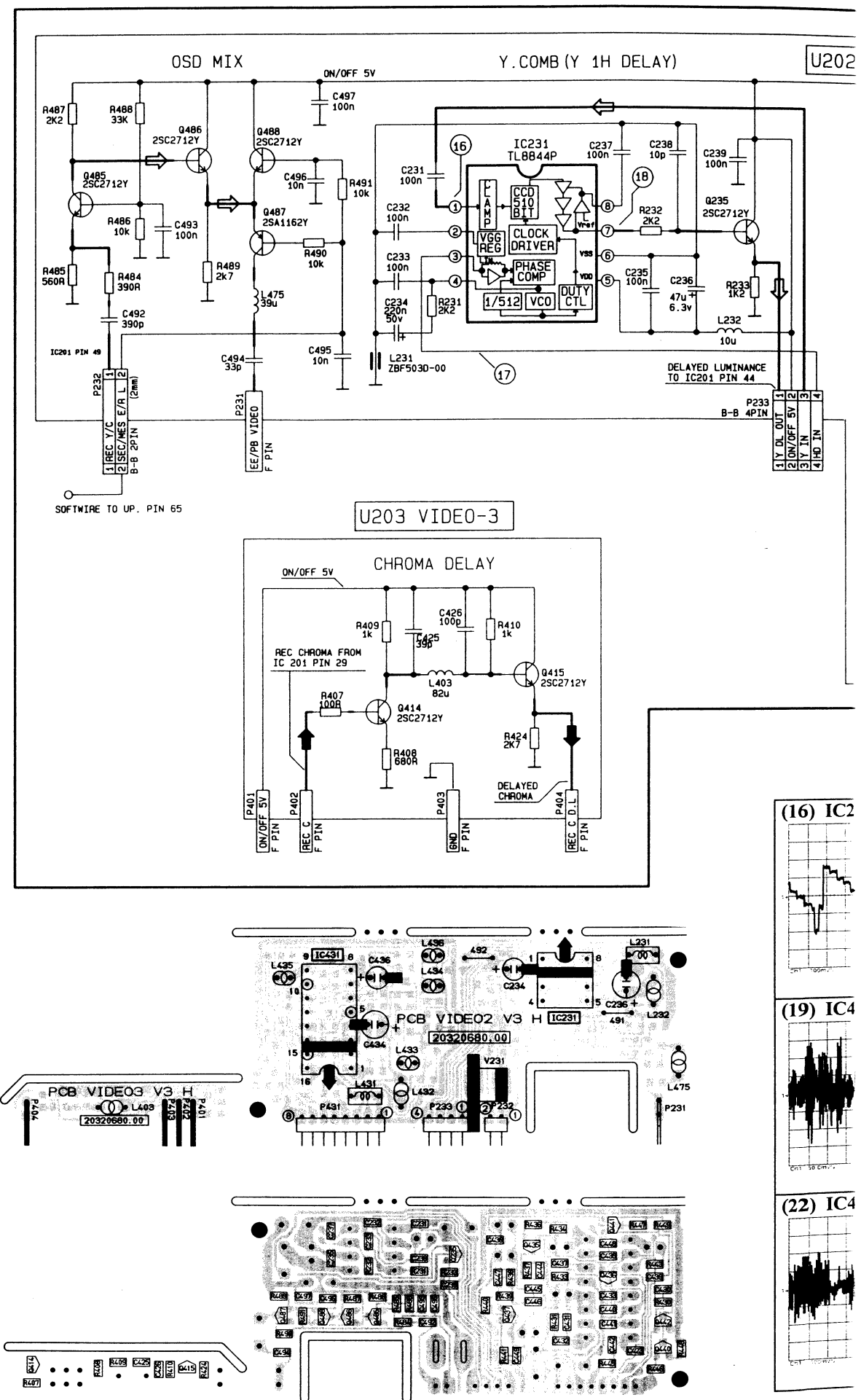
MAIN VIDEO		MODE		
LOC	PIN	PB	REC	EE
IC201	1	2.8	2.8	2.8
	2	2.1	2.1	2.2
	3	1.6	1.6	1.6
	4	0	4.1	4.1
	5	2.6	2.5	2.5
	6	2.7	2.6	2.6
	7	0	0	0
	8	2.9	2.8	2.9
	9	2.2	1.8	1.8
	10	0	0	0
	11	3.1	3.1	3.1
	12	4.8	4.9	4.8
	13	4.8	4.8	4.9
	14	4.8	4.8	4.8
	15	0	0	0
	16	2.1	1.2	1.2
	17	3.7	3.8	3.8
	18	1.8	2.2	2.2

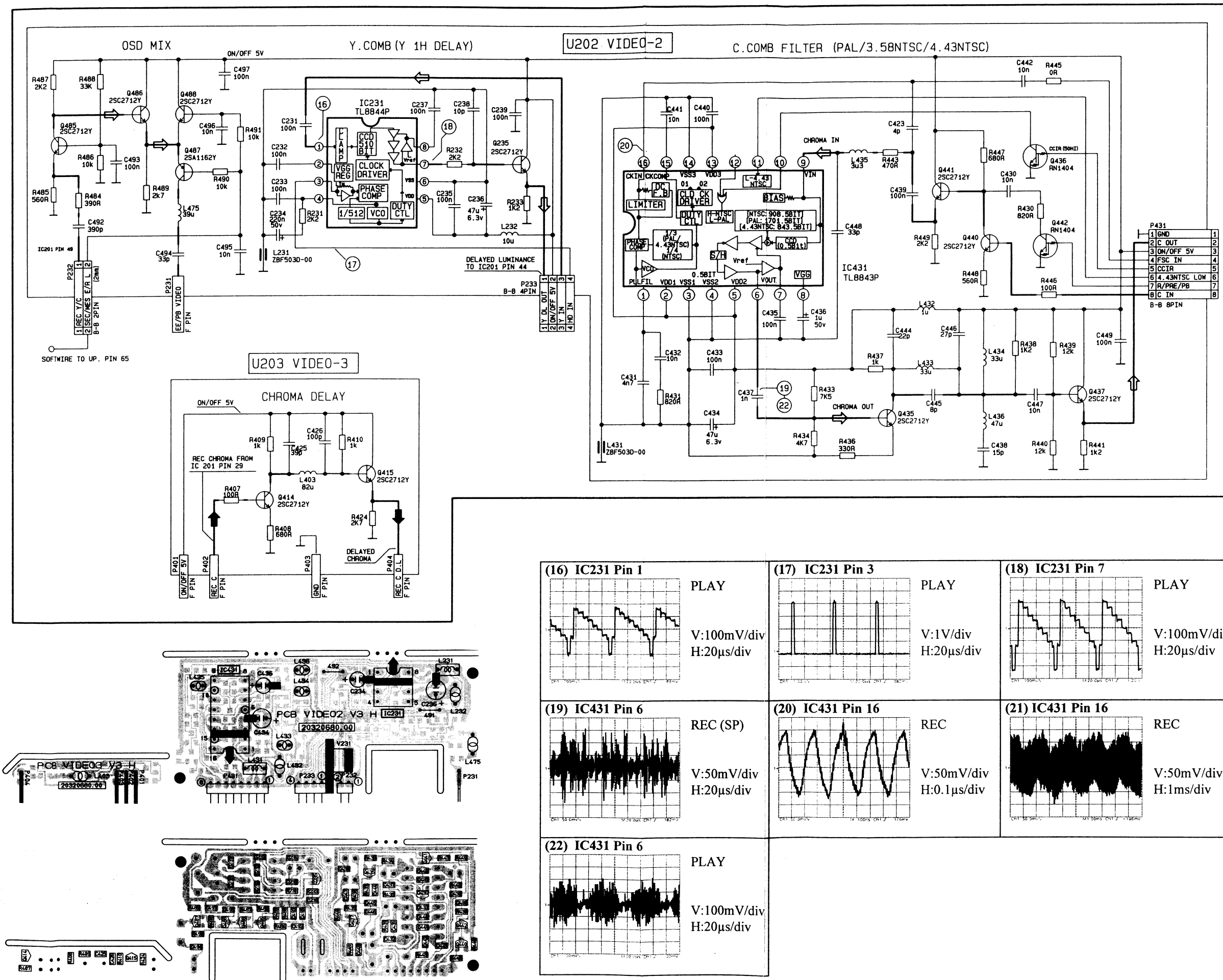
MAIN VIDEO		MODE		
LOC	PIN	PB	REC	EE
IC201	19	2.8	2.8	2.8
	20	1.9	2.2	2.2
	21	2.8	2.8	2.7
	22	2.3	2.8	2.8
	23	3.7	3.7	3.7
	24	2.9	2.8	2.8
	25	2.8	2.8	2.8
	26	0.8	0.9	0.8
	27	3.0	2.7	2.7
	28	4.8	4.9	4.9
	29	1.7	1.5	1.5
	30	2.7	1.9	1.8
	31	1.5	1.5	1.5
	32	1.6	1.8	1.8
	33	2.9	2.9	2.9
	34	2.5	2.5	2.5
	35	4.8	4.8	4.8
	36	3.0	2.5	2.5

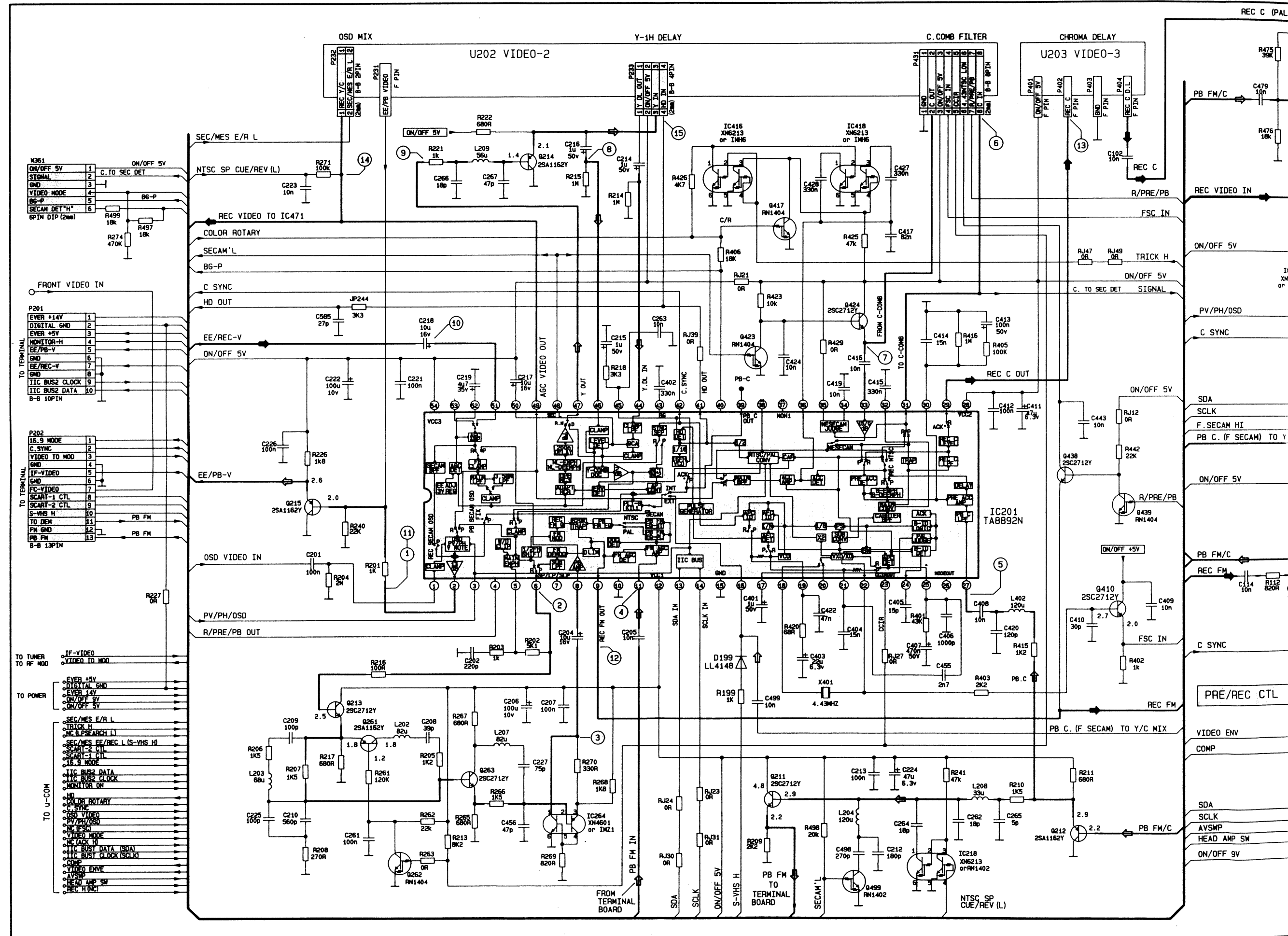
MAIN VIDEO		MODE		
LOC	PIN	PB	REC	EE
IC201	37	2.1	2.2	2.1
	38	2.1	2.0	2.1
	39	1.7	0.4	0.3
	40	0.9	1.0	0.7
	41	0.4	0.4	0.4
	42	0.5	0.5	0.4
	43	2.5	2.5	2.5
	44	4.1	4.1	4.1
	45	2.7	2.7	2.7
	46	3.4	3.4	3.5
	47	1.6	1.5	1.5
	48	0.2	0.2	0.2
	49	3.8	1.5	1.5
	50	3.5	3.5	3.5
	51	2.2	2.2	2.2
	52	2.5	2.4	2.4
	53	2.2	2.2	2.2
	54	4.9	4.8	4.9

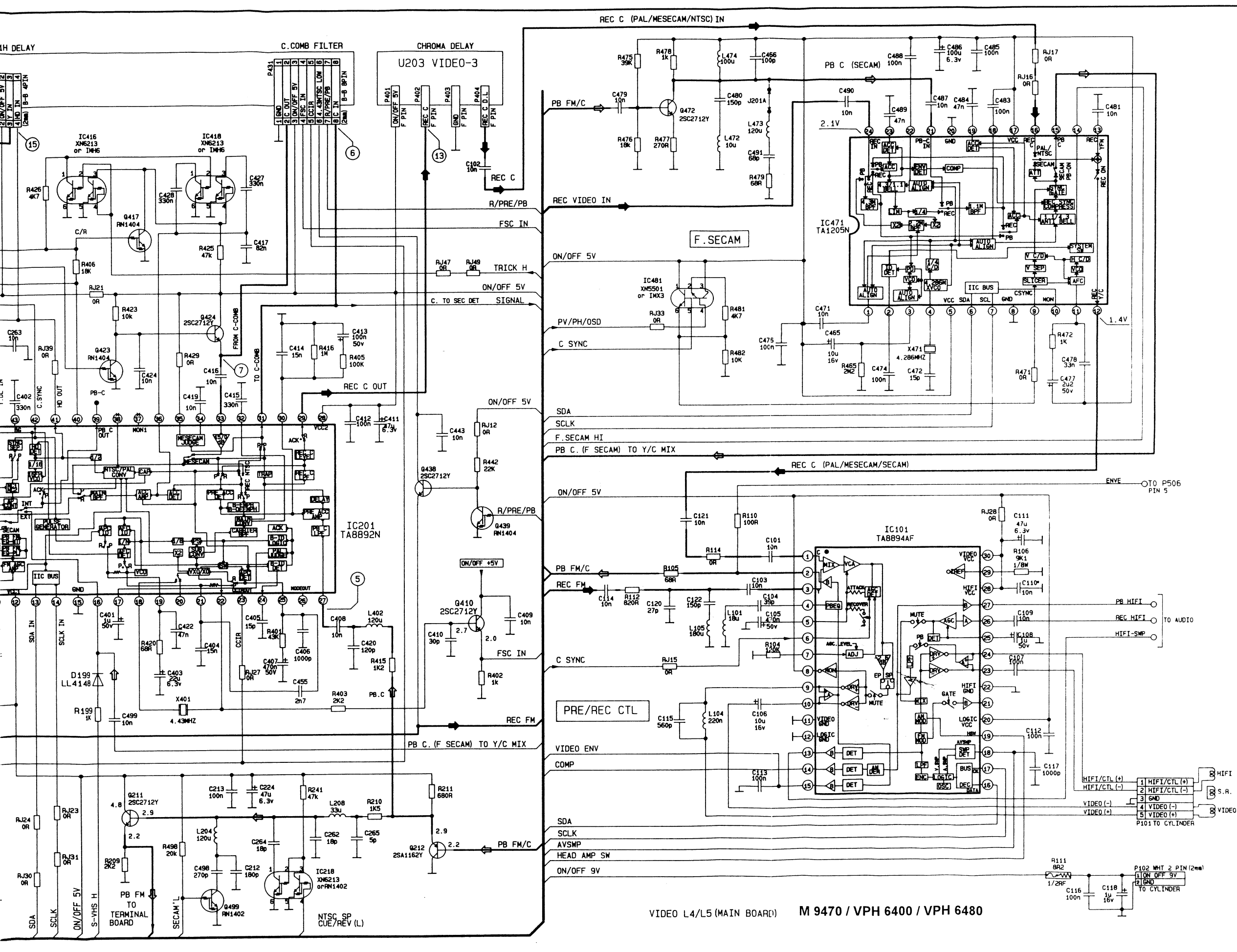




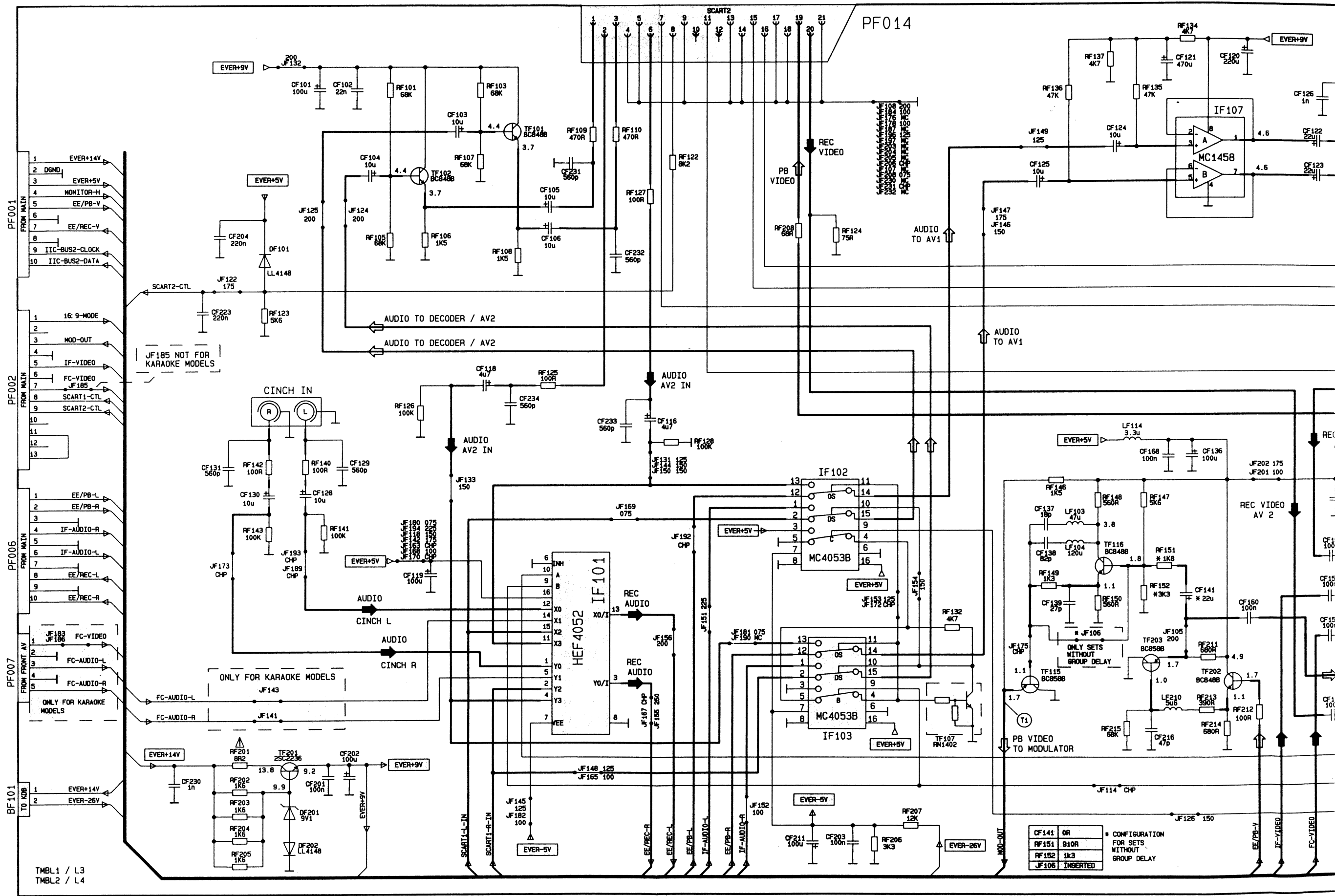






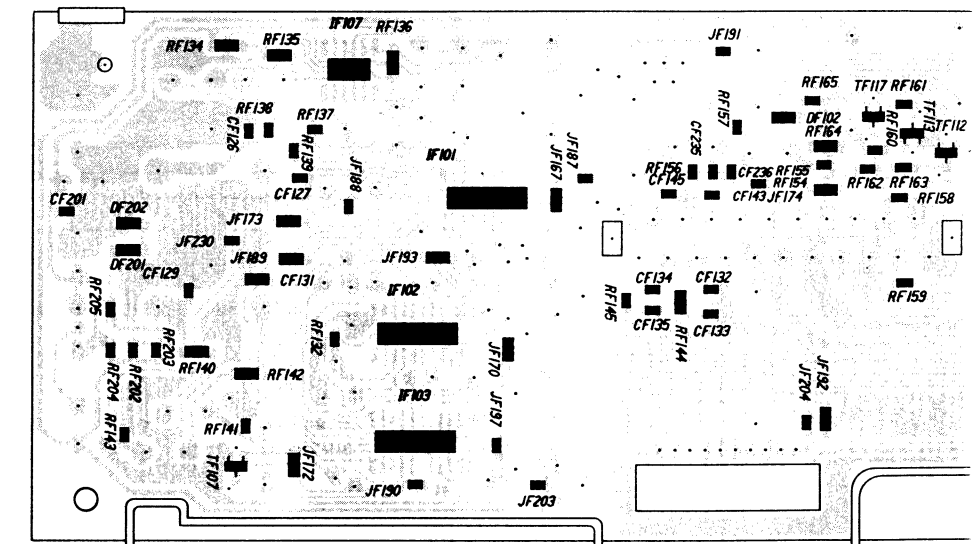
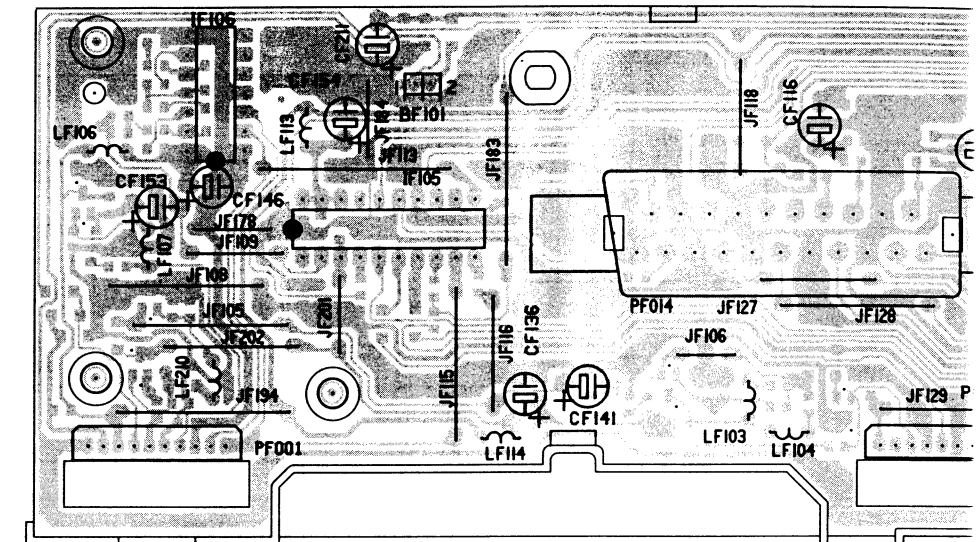


**Scart connection board • Platine prises Scart • Leiterplatte Scart Anschlußplatte
Piastra Scart • Platina Scart**



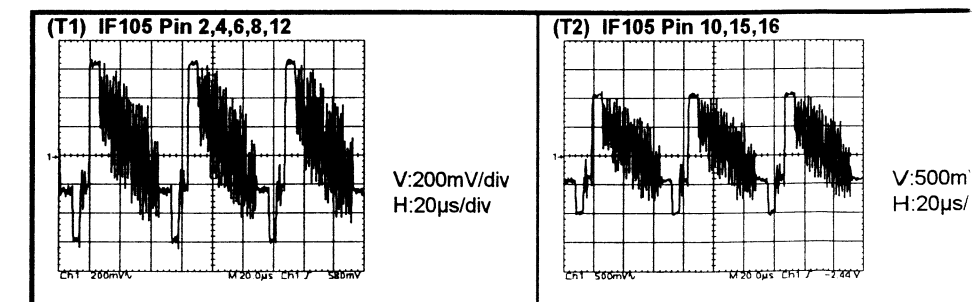
FV 88 HVX / M 9460 / V3445 SV / VPH 6400 / VPH 6480

Scart connection board • Platine prises Scart • Leiterplatte Scart Anschlu
Piastra Scart • Platina Scart



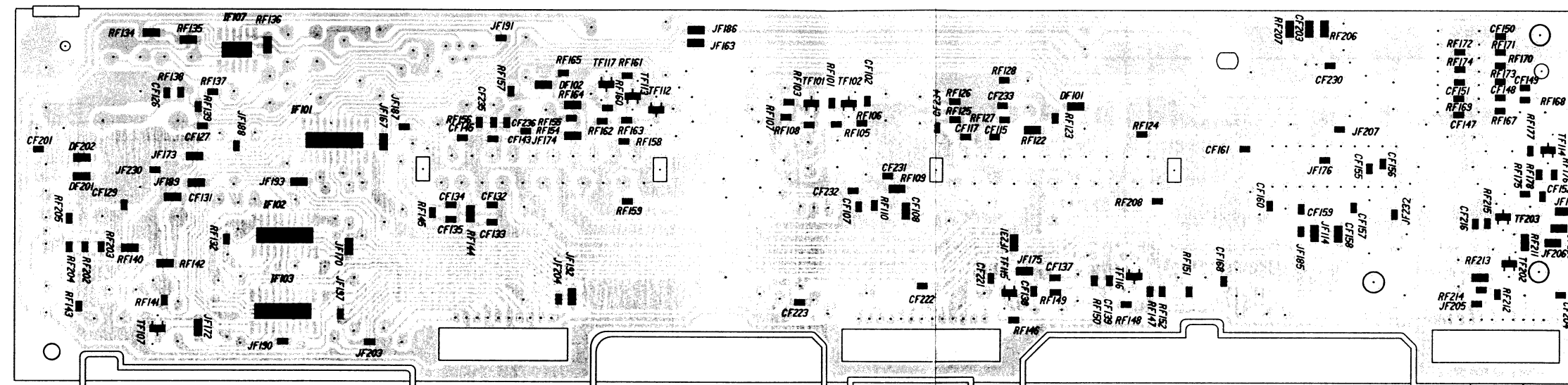
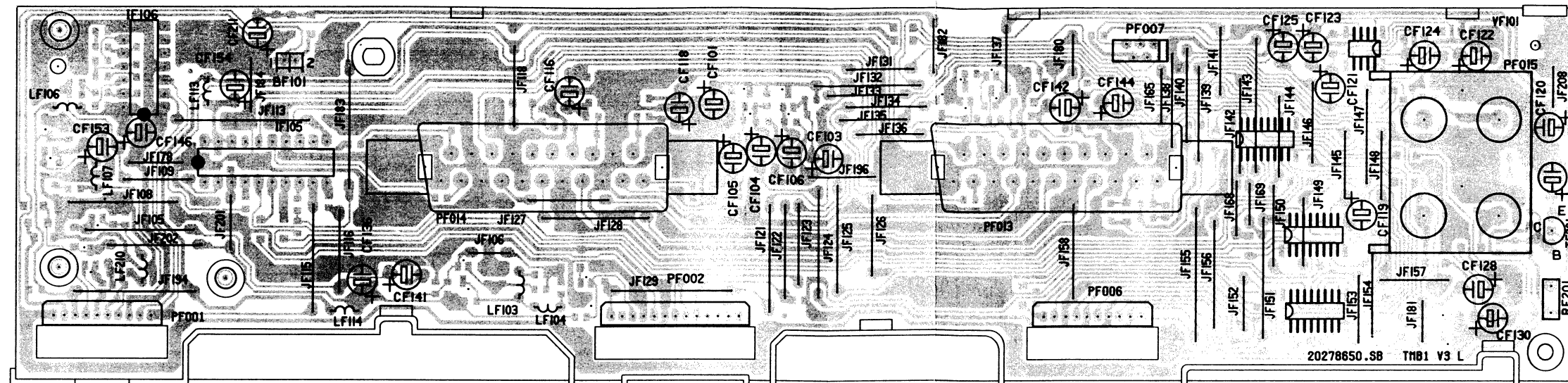
**Measurements Scart connection board • Mesures platine prises Scart • M
Misuri piastra Scart • Medidas platina Scart**

IF 105			IF 102 / 103			
5	7	13	15 TO AV 2 OUT	14 TO AV 1 OUT		REC / EE
L	L	L	AV 1	EE / PB	DECODER AV	CINCH
L	L	H	AV 1	AV 2	MONITOR	CINCH
L	H	L	AV 1	EE / PB	DECODER AV	AV 1
L	H	H	IF	EE / PB	DECODER IF	AV 1
H	L	L	AV 1	EE / PB	DECODER AV	Front Audio
H	L	H	AV 1	AV 2	MONITOR	Front Audio
H	H	L	AV 1	EE / PB	DECODER AV	AV 2
H	H	H	IF	EE / PB	DECODER IF	AV 2
EE / REC CTL		Monitor/Decoder CTL				

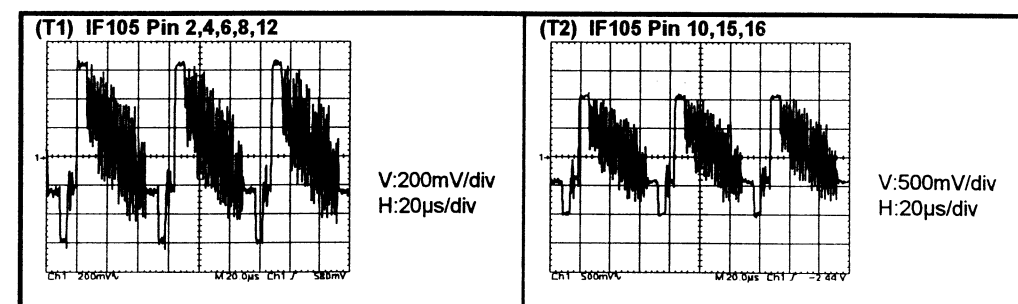


SELECTED MODE	IF 105 Pin 13	IF 105 Pin 7	IF 105 Pin 5	RECORDED SIGNAL
AV 1 (SCART 1)	X	H	L	Audio / Video AV 1
AV 2 (SCART 2)	X	H	H	Audio / Video AV 2
AV 3 (Front AV)	X	L	H	Front Audio/Video (not for all models)
HIFI (Cinch)	X	L	L	Audio Cinch (Rear Input sockets)
Si – Cinch)	X	L	L	Audio Cinch (Rear Input sockets)
PR– (TUNER)	X	L	L	IF Audio (selected on Audio board)

**Scart connection board • Platine prises Scart • Leiterplatte Scart Anschlußplatte
Piastra Scart • Platina Scart**

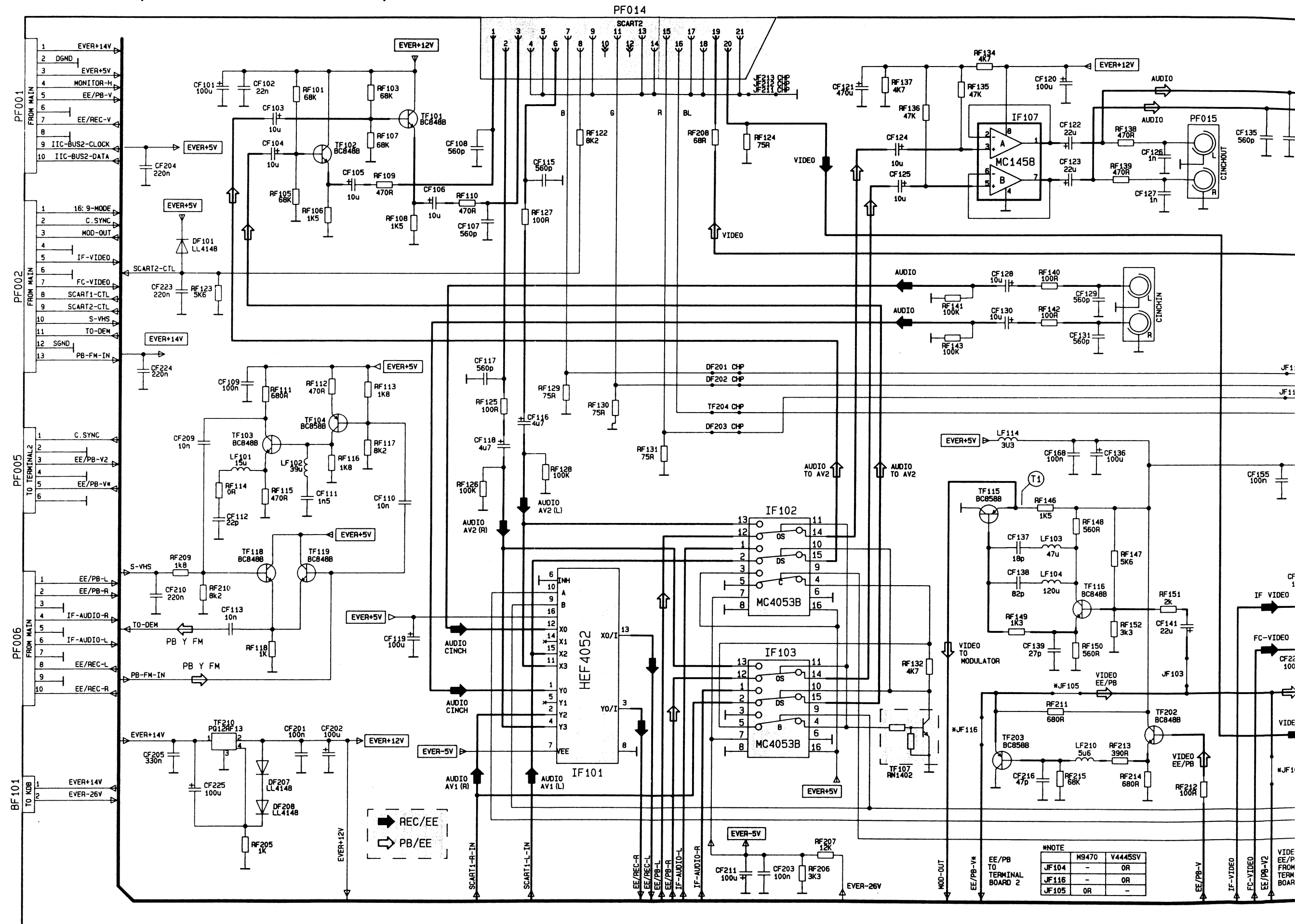


**Measurements Scart connection board • Mesures platine prises Scart • Messungen Scart Anschlußplatte
Misuri piastra Scart • Medidas platina Scart**

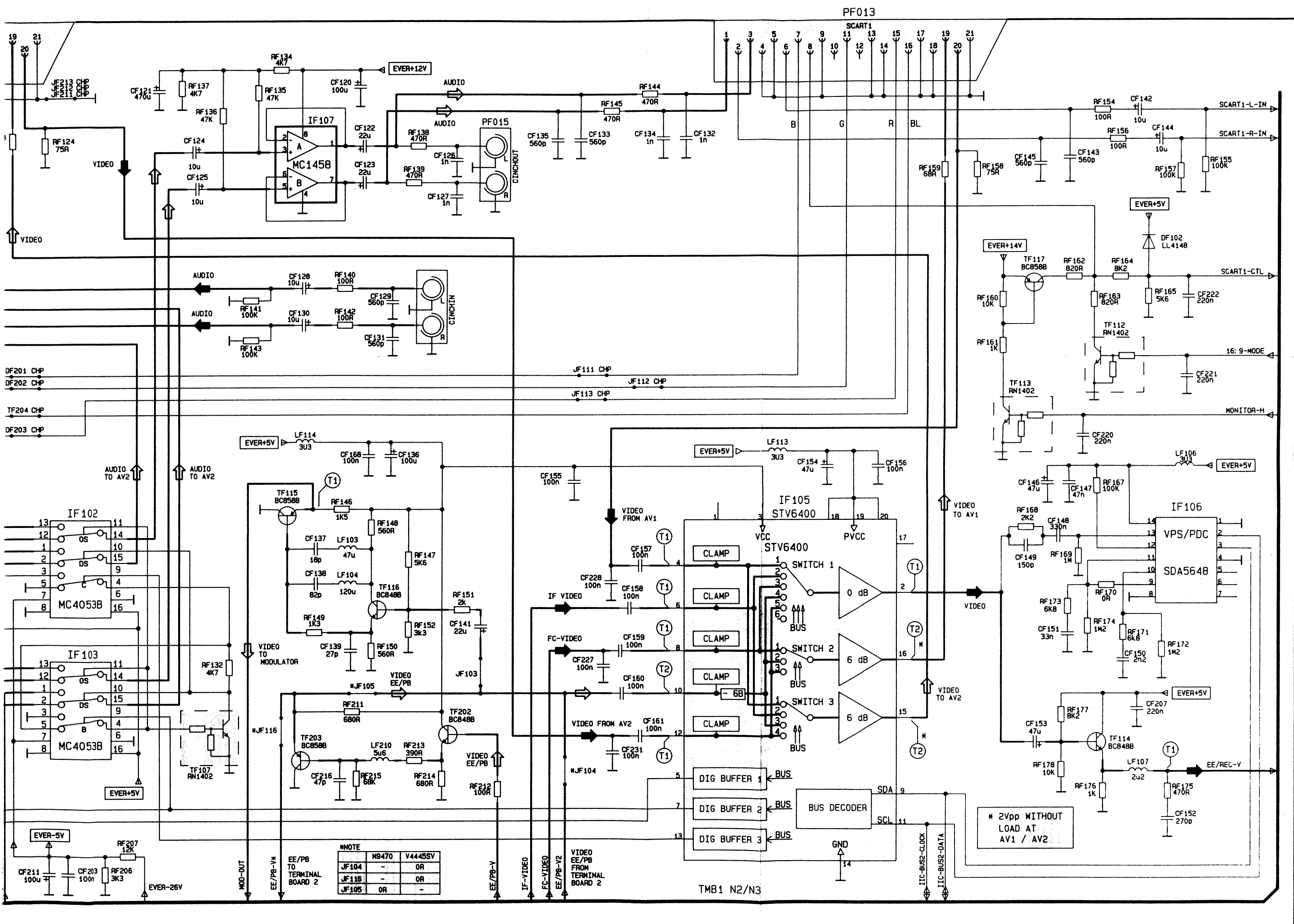


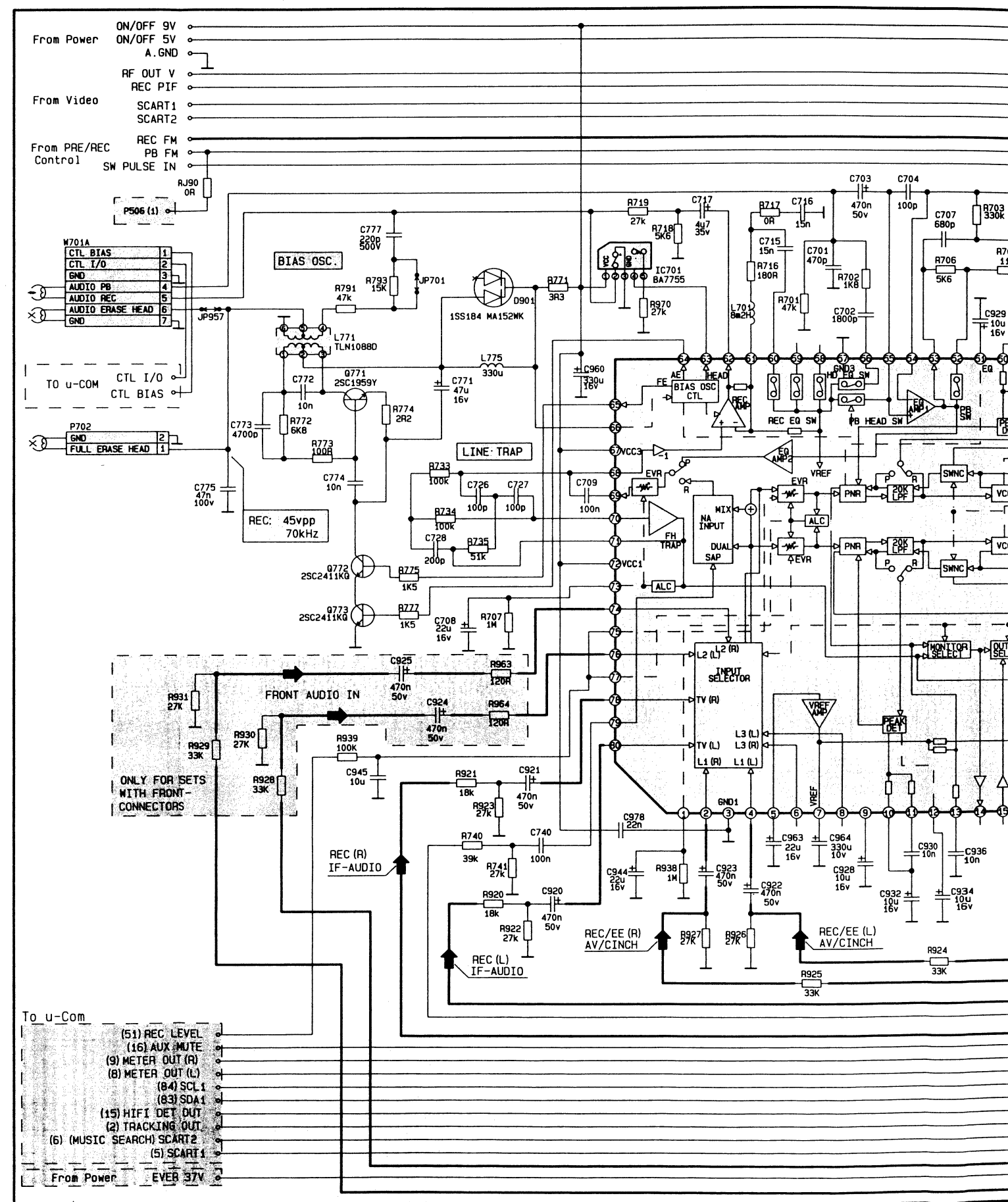
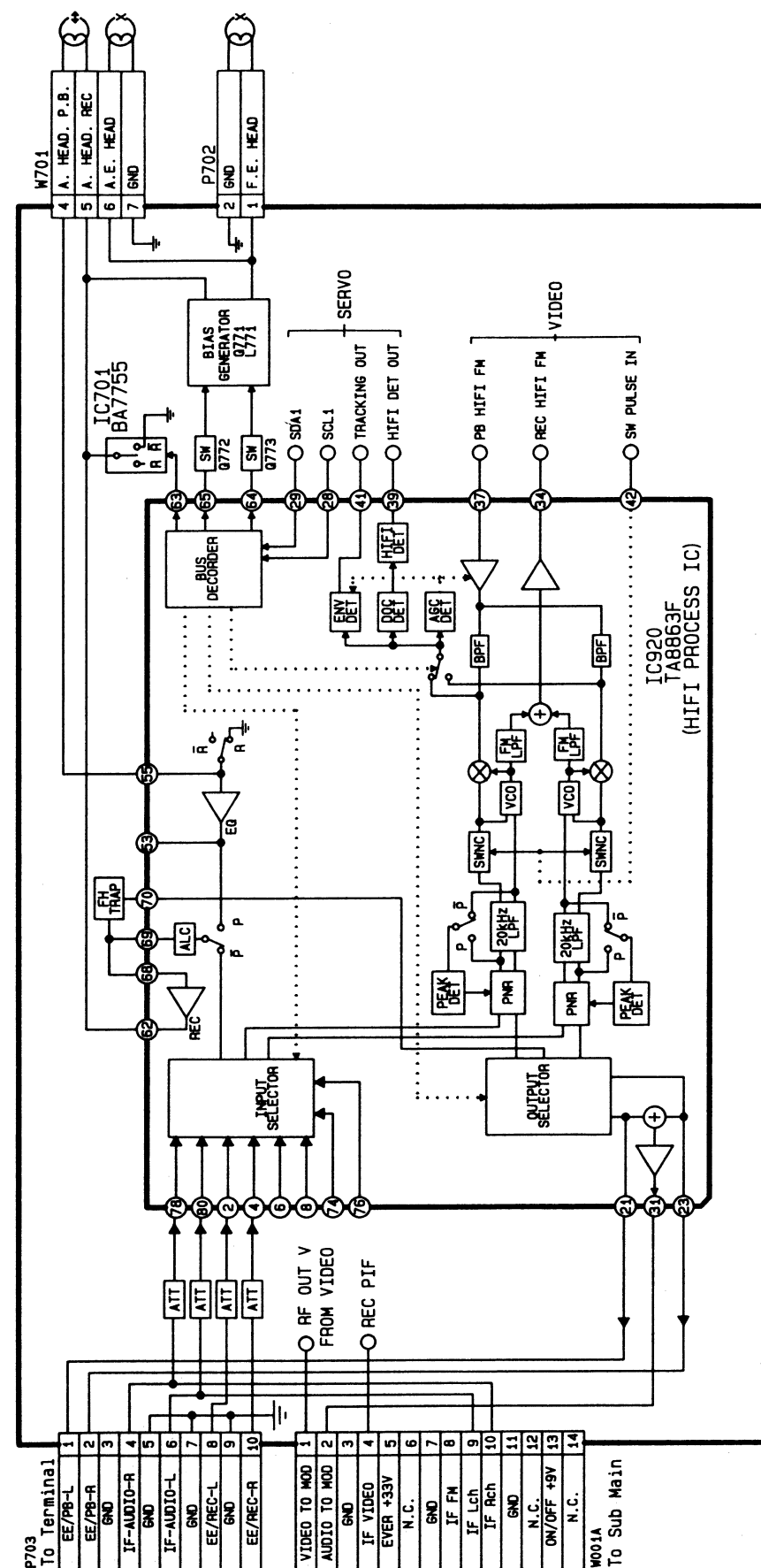
TERMINAL BOARD		MODE			REMARKS
LOC	PIN	PLAY	REC	EE	
IX001	1	NC	NC	NC	
	2	1.1/0.7	1.1/0./	1.1/0.7	Depends on selected input/signal
	3	5.0	5.0	5.0	
	4	1.7	1.7	1.1	
	5				Input select
	6	2.3	2.3	2.3	
	7				Input select
	8	1.3	1.3	1.3	
	9				IIC Bus SDA
	10	2.7	2.3	2.3	
	11				IIC Bus SCL
	12	1.2	1.3	1.3	
	13				Input select
	14	0	0	0	
	15	1.7/0.7	1.6/0.5	1.7/0.7	Depends on selected input/signal
	16	2.1/0.7	1.9/0.7	1.7/0.7	Depends on selected input/signal
	17	NC	NC	NC	
	18	5.0	5.0	5.0	
	19	5.0	5.0	5.0	
	20	5.0	5.0	5.0	

Scart connection board with SVHS PB • Platine prises Scart avec lecture SVHS • Leiterplatte Scart Anschlußplatte mit SVHS Wiedergabe
Piastra Scart con riproduzione SVHS • Platina Scart con reproducción SVHS

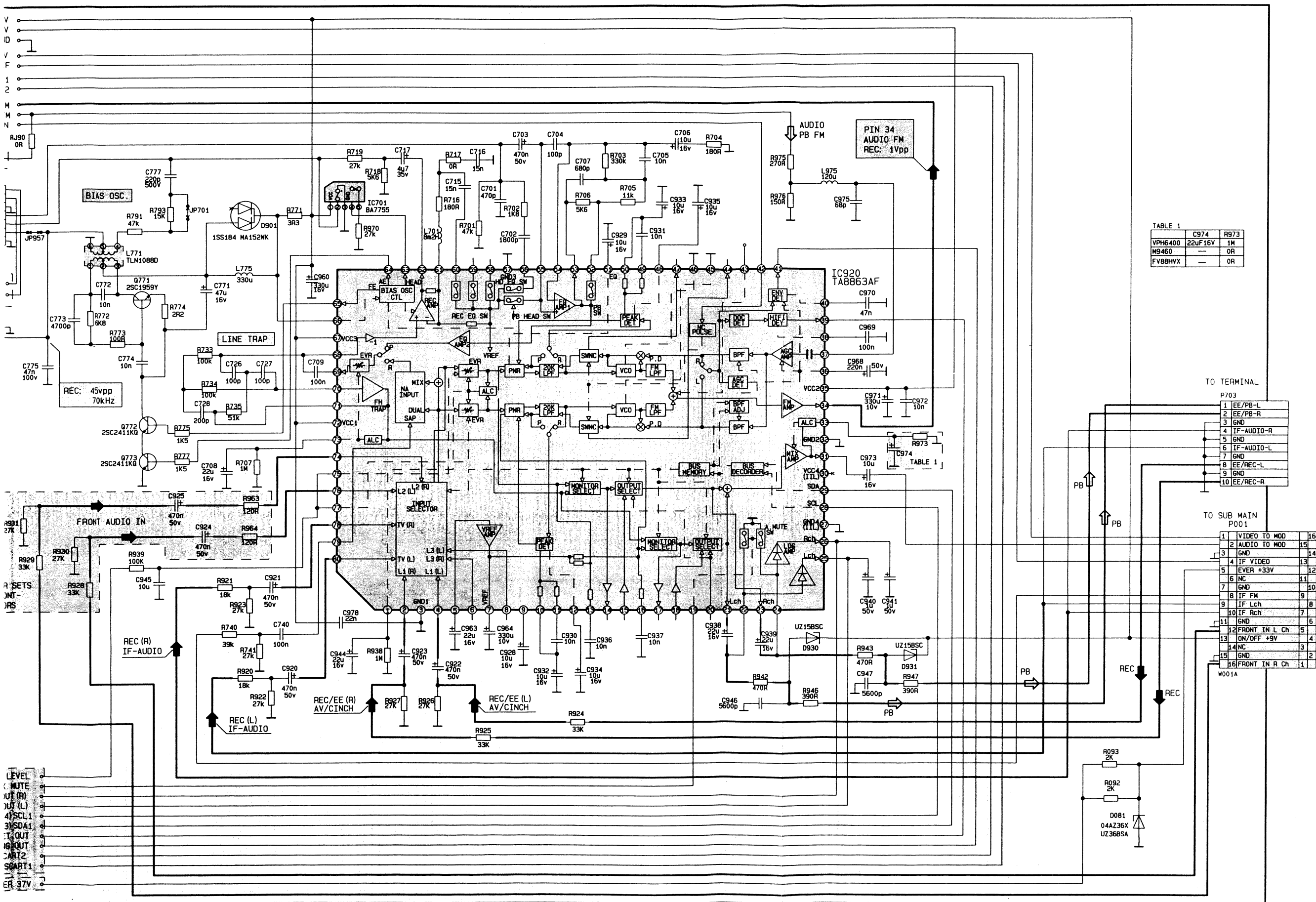


M 9470 / V 4445 SV

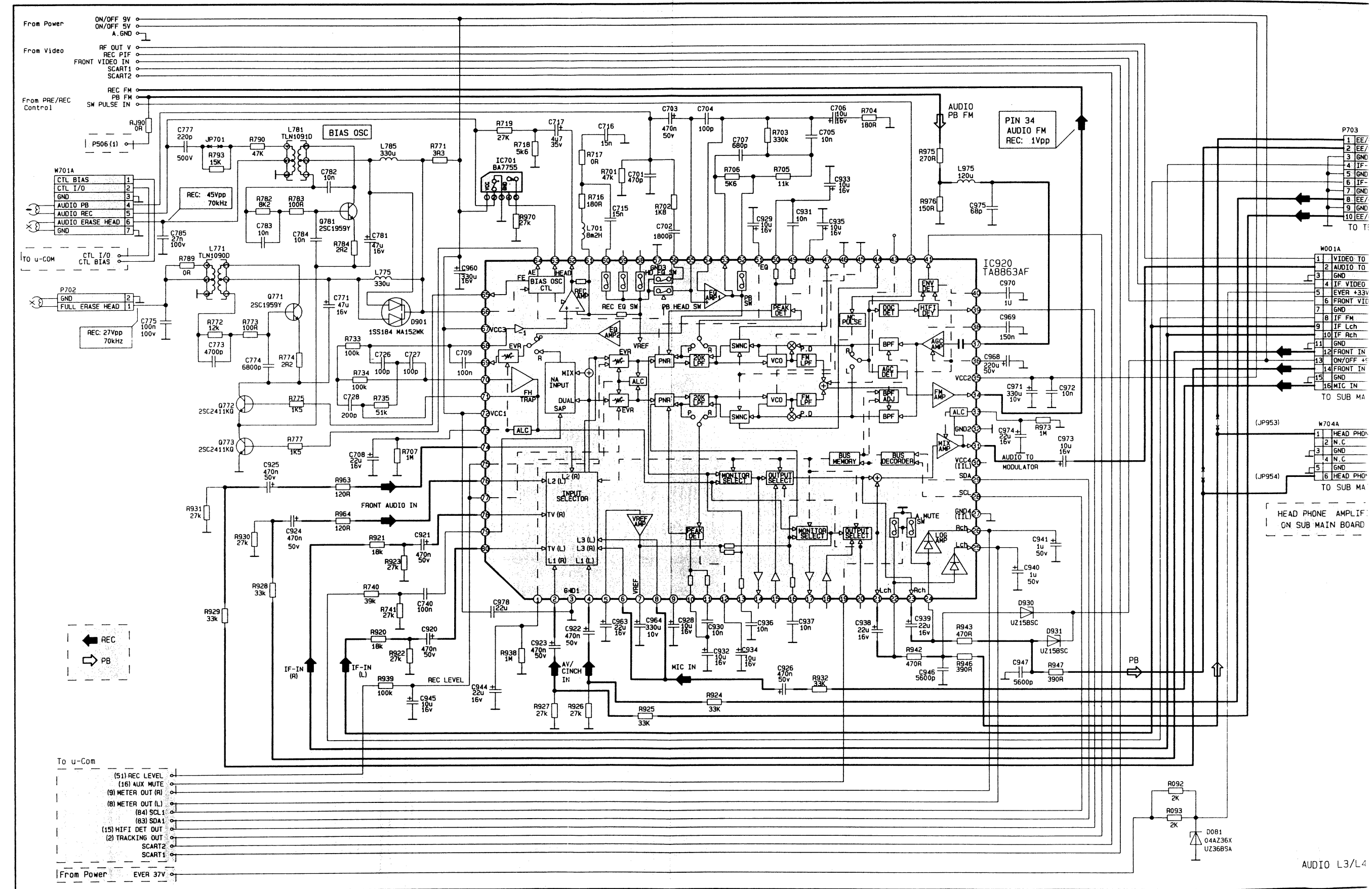




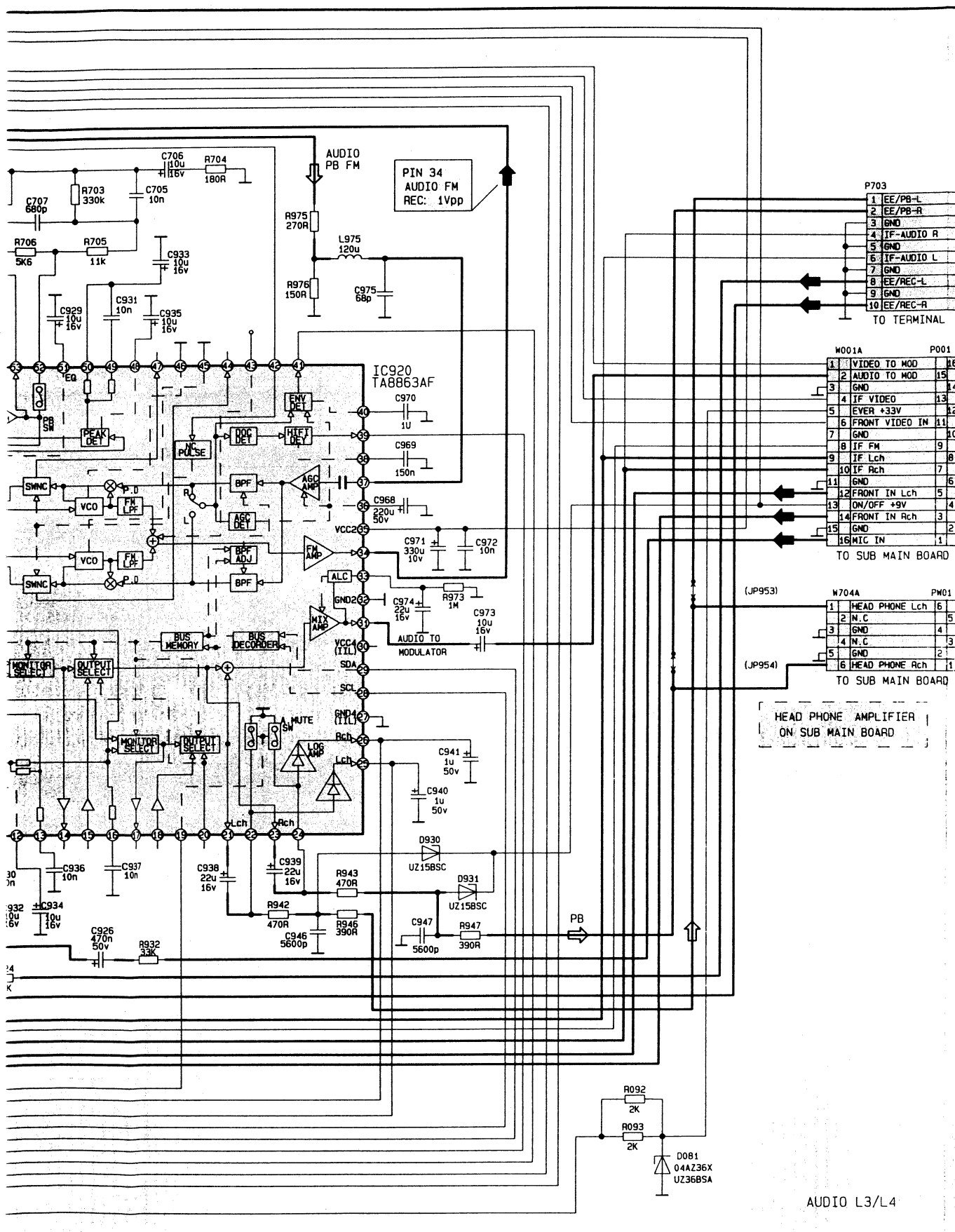
FV 88 HVX / M 9460 / VPH 6400



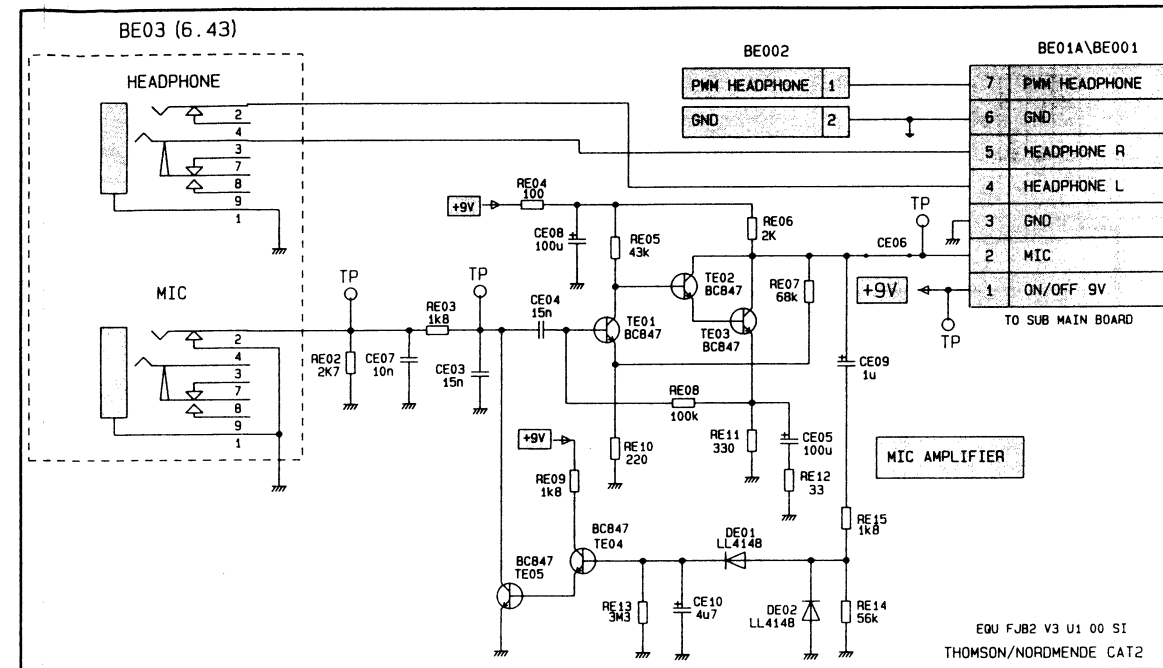
Audio signal processing (Dubbing) • Schéma des circuits audio (Dubbing) • Audio Signalverarbeitung (Nachvertonung)
Elaborazione audio (Dubbing) • Tratamiento audio (Dubbing)



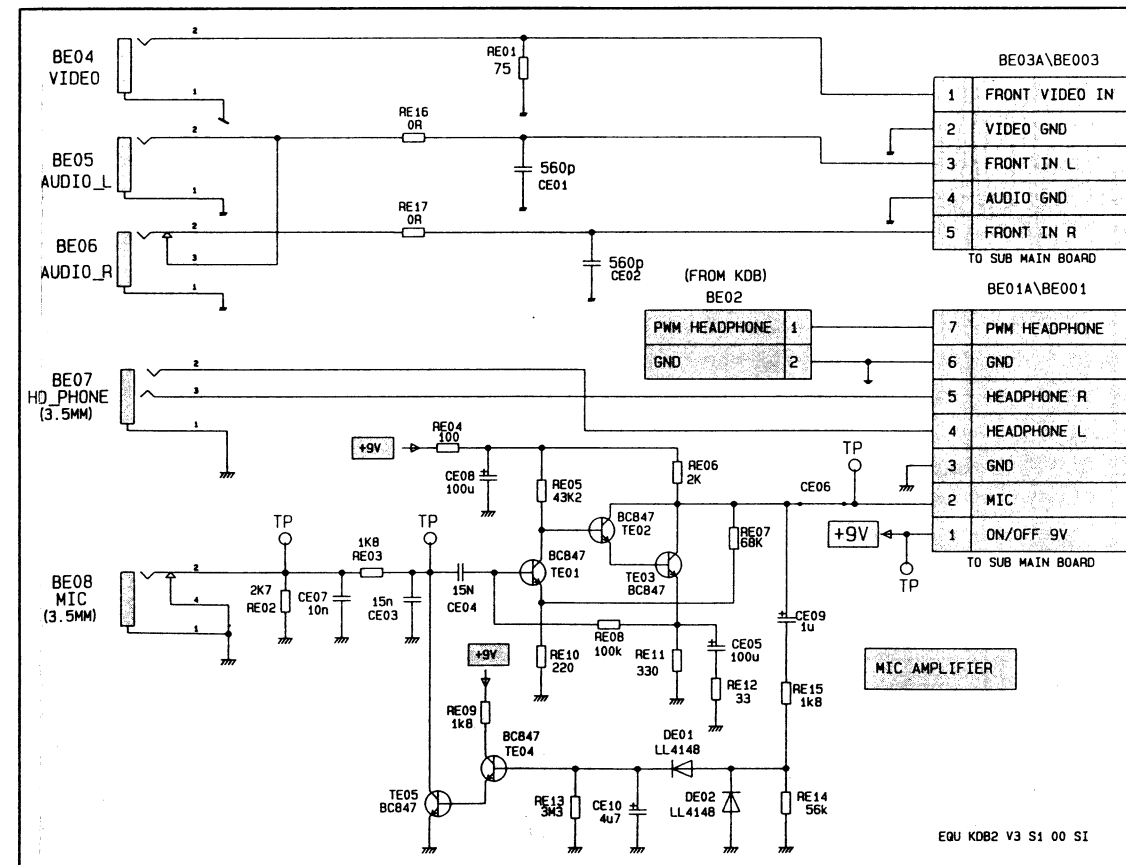
M 9470 / V 3445 SV / V 4445 SV



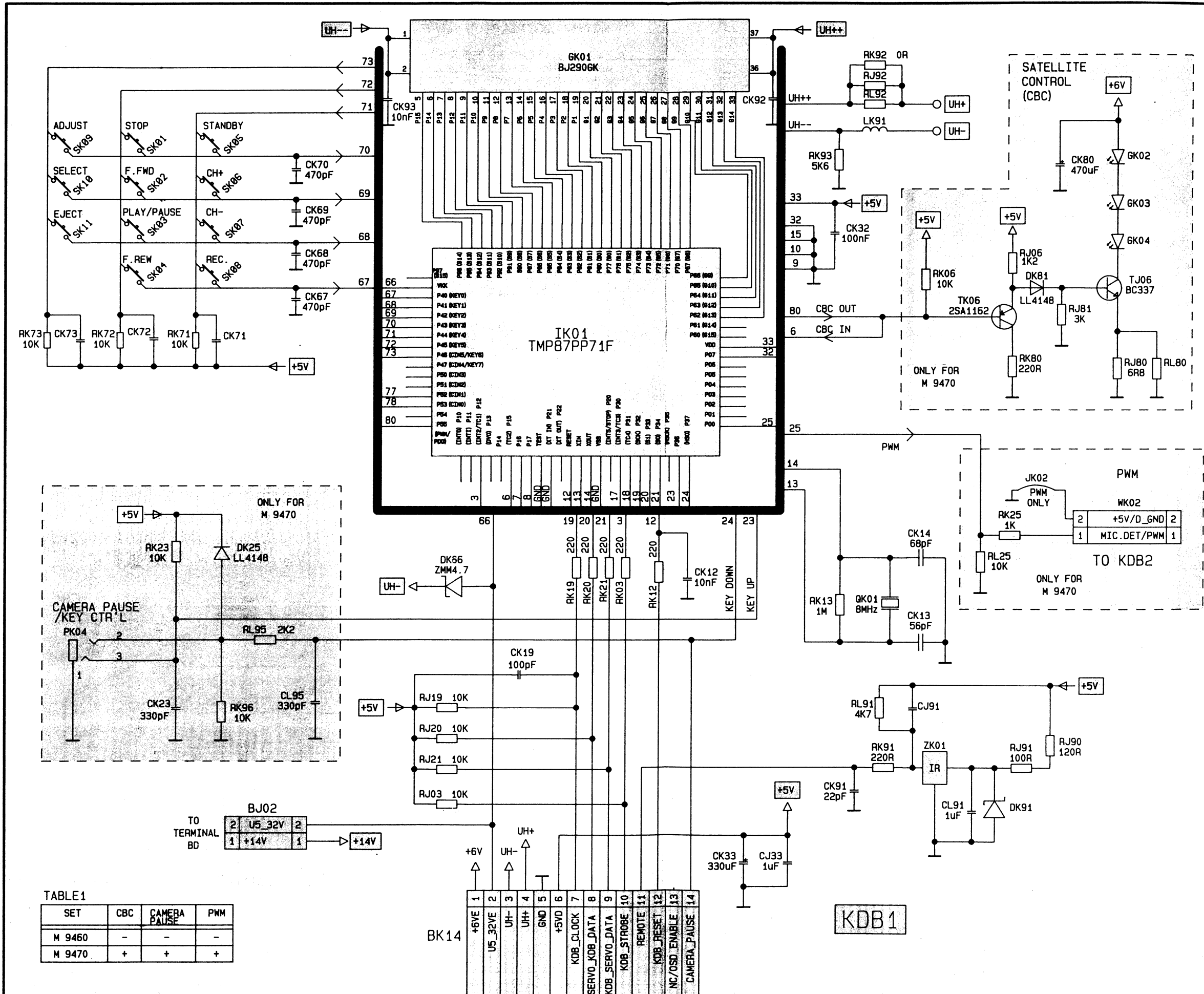
Front Connection Board Thomson/Nordmende

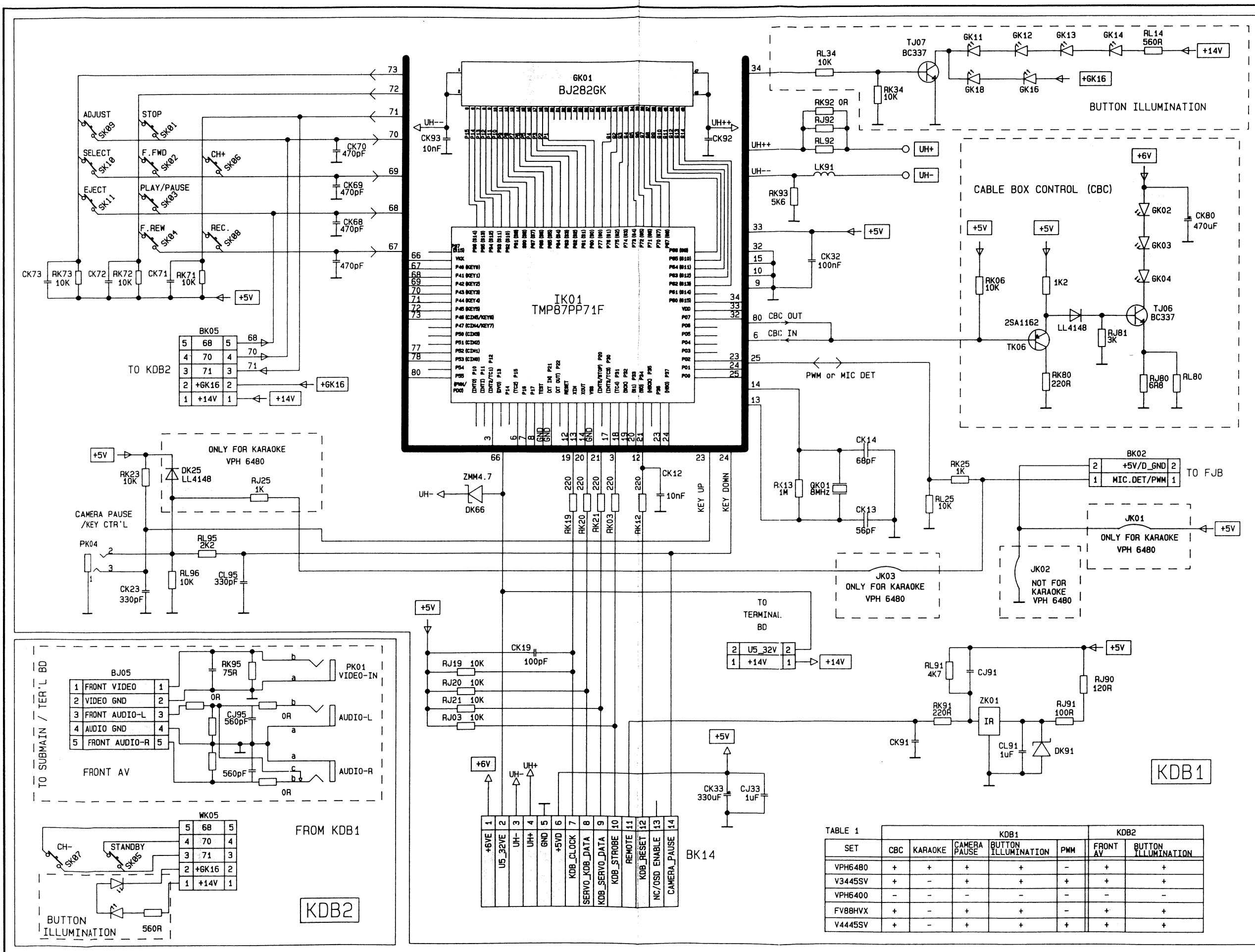


Front Connection Board Telefunken



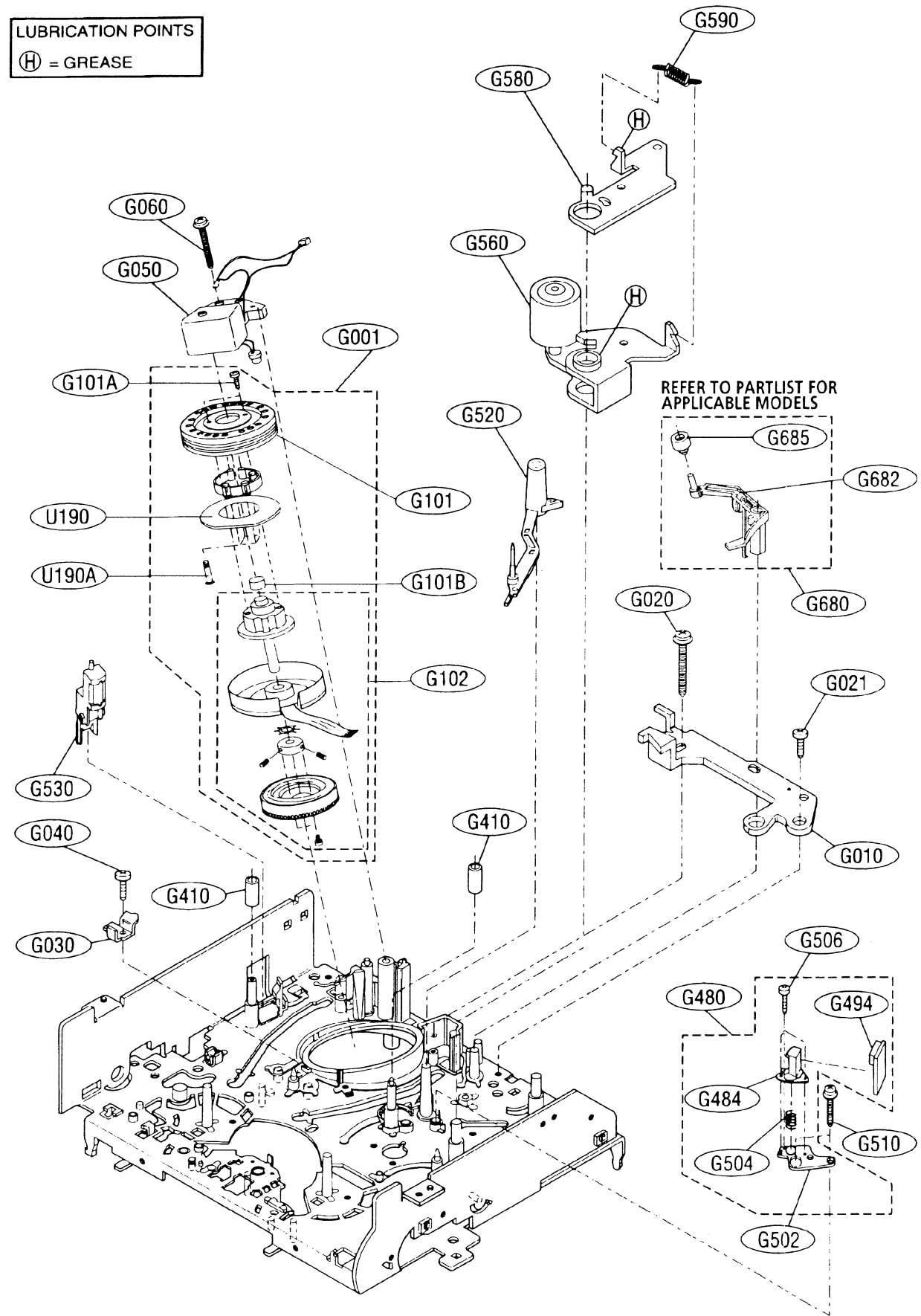
**Key-Display-Board (Telefunken) • Platine de commandes (Telefunken) • Bedienteil (Telefunken)
Tastiera (Telefunken) • Platina mandos (Telefunken)**



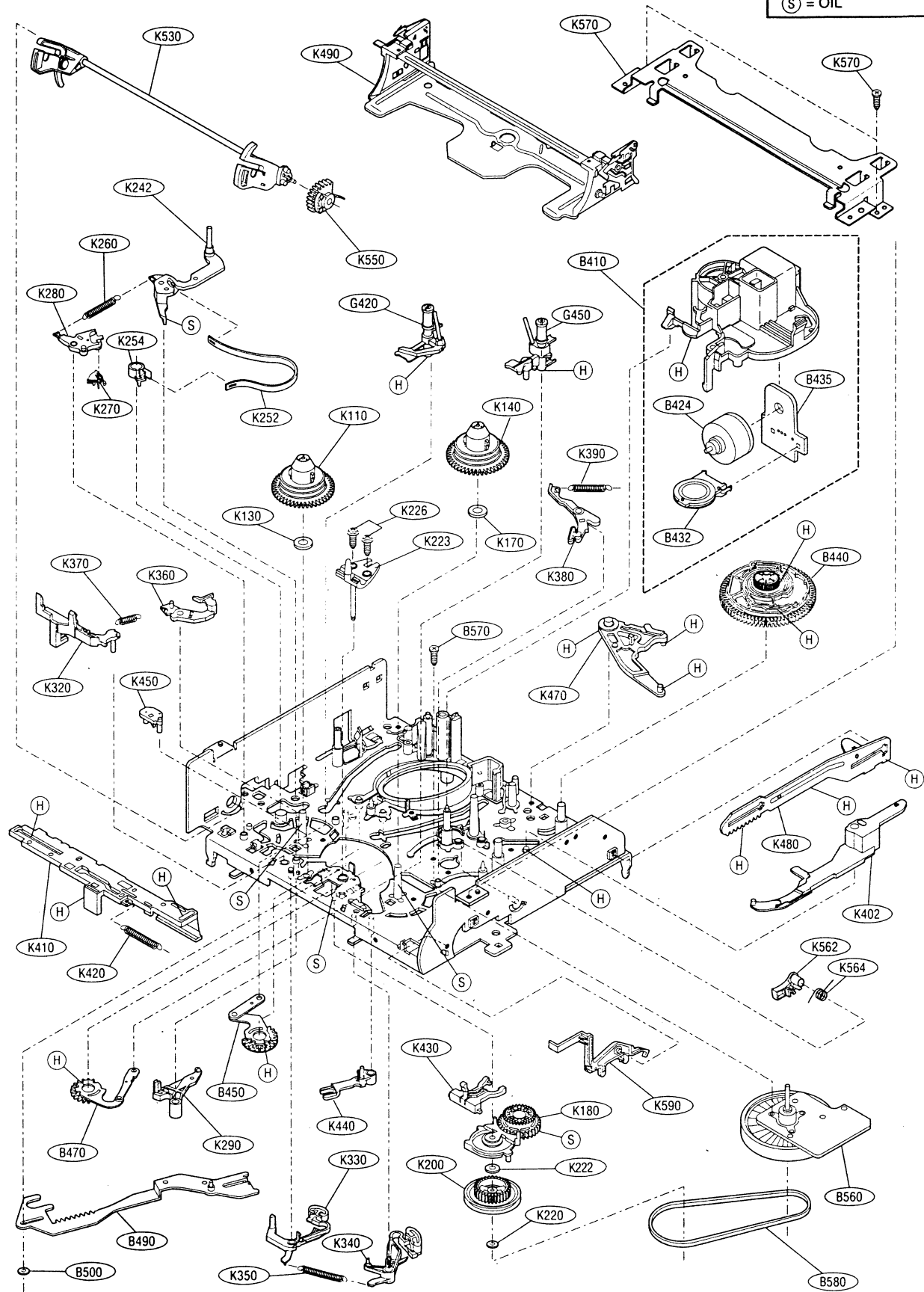


MECHANICAL PARTS (1)

LUBRICATION POINTS
(H) = GREASE



LUBRICATION POINTS
(H) = GREASE
(S) = OIL



Spare Parts
Ersatzteile

Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
0060		LAUFW., MEV3-CFW.....	MECHANISM DECK ASSY	MECCANISMO CPL.
B410 / 2	201.871.70	Lademotor R4000, kpl.	Loading drive motor, assy	Motore, cpl.
B424 / 2	201.872.40	Lademotor R4000	Loading motor	Motore
B432 / 2	201.872.90	Kurvenradschalter (SW-LOADING)	Cam sw	Camma
B440 / 2	201.873.30	Nockenrad R4000	Cam gear	Camma ruota dentata
B450 / 2	201.873.20	Zahnrad, S-LOADING, kpl.	Gear	Ruota dentata
B470 / 2	201.874.40	Zahnrad, T-LOADING	Gear	Ruota dentata
B490 / 2	201.875.10	Schieber, LOADING	Slider	Slitta
B560 / 2	202.029.80	Motor, Capstan R4000	Capstan motor	Motore capstan
B580 / 2	201.887.20	Antriebsriemen R4000	Belt	Cinghia
G001 / 1	202.125.40	Kopftrommel CFWA6PK, kpl.	Drum assy, 4HD/HIFI	Tamburo di testa, cpl.
M9470	202.125.60	Kopftrommel CFWA6SK, kpl.	Drum assy, 4HD/HIFI/NTSC	Tamburo di testa, cpl.
V4445	202.049.70	Kopftrommel CFWF7PK, kpl.	Drum assy, 4HD/HIFI	Tamburo di testa, cpl.
G050 / 1	202.034.90	Schleifring kpl.	Slip ring assy	Slip ring assy
G420 / 2	201.865.10	Führungsrollenplatte, Abw.Seite, kpl.	Supply slider asy	Guida nastro, cpl.
G450 / 2	201.866.30	Führungsrollenplatte, Aufw.Seite, kpl.	Take up slider asy	Guida nastro, avvolgere, cpl.
G480 / 1	202.962.80	ACE-Kopf V3 S-COMBAT	Audio/Control head	Testina audio e impulso
G520 / 1	201.867.60	Führungshebel 9	Guide lever	Leva guida
G530 / 1	201.887.40	Voll-Löschkopf R4000	Full erase head	Testina di cancellazione
G560 / 1	201.870.20	Andruckrolle, kpl. R4000	Pinch lever asy	Rullo di pressione, cpl.
G580 / 1	201.871.20	Hebel, PINCH DRIVE, kpl.	Lever asy	Leva, cpl.
G590 / 1	201.871.50	Feder PINCH	Spring	Molla
G680 / 1	201.888.30	Kopftrommelreiniger, kpl.	Head cleaner asy	Depuratore tamburo di testa, cpl.
G688 / 1	201.888.70	Kopfreiniger	Head cleaner	Base pulire tamburo di testa
K110 / 2	201.861.10	Bandteller, Abw.Seite	Supply reel	Portabobina di svolgimento
K140 / 2	201.862.20	Bandteller, Aufw.Seite, kpl.	Take up reel asy	Portabobina avvolgimento, cpl.
K180 / 2	201.862.80	Schwenkkupplungsrolle, kpl.	Idler asy	Puleggia, cpl.
K200 / 2	201.864.60	Riemenscheibe CENTER	Gear pulley	Puleggia
K242 / 2	201.868.10	Bandzugsühlhebel, kpl. R4000	Tension lever asy	Leva di tensione, cpl.
K252 / 2	201.868.40	Spannband (R4000) kpl.	Brake band asy	Staffa di tensione, cpl.
K254 / 2	201.868.60	Halter, Bremsband R4000	Holder	Supporto
K260 / 2	203.923.70	Feder V3 (TENSION LEVER)	Spring	Molla
K270 / 2	201.869.10	Verriegelungshebel (TENSION LEVER)	Hook	Leva arresto
K280 / 2	201.869.20	Hebel (HOOK)	Lever	Leva
K290 / 2	201.869.30	Hebel (TENSION DRIVE)	Lever	Leva
K320 / 2	201.875.80	Hebel (REC-INH)	Lever	Leva
K330 / 2	201.877.10	Hauptbremse, abwickeln	Main brake, supply	Freno principale, svolgere
K340 / 2	201.877.30	Hauptbremse, aufwickeln	Main brake, take up	Freno principale, avvolgere
K350 / 2	201.877.40	Feder	Spring	Molla
K360 / 2	201.876.20	Bremshebel, SU SOFT BRAKE	Brake lever	Leva di freno
K370 / 2	201.877.60	Feder	Spring	Molla
K380 / 2	201.877.70	Bremshebel, TU Softbrake	Lever soft brake	Leva di freno
K390 / 2	201.879.10	Feder	Spring	Molla
K402 / 2	201.876.40	Hebel (DRIVE)	Lever	Leva
K410 / 2	201.879.20	Schieber, CAM	Slider cam	Slitta
K420 / 2	201.879.30	Feder	Spring	Molla
K430 / 2	201.876.50	Hebel (IDLE-UP DOWN)	Lever	Leva
K440 / 2	201.876.60	Hebel (IDLE KICK)	Lever	Leva
K450 / 2	201.879.40	Hebel (IDLE CENTERING)	Lever	Leva
K470 / 2	201.881.90	Hebel (CAM)	Lever	Leva
K480 / 2	201.880.80	Schieber (FL DRIVE)	Slider	Slitta
K490 / 2	201.880.90	Cassettenhalter	Cassette holder	Portacassette
K530 / 2	201.875.40	Antriebsachse kpl.	Drive arm asy	Spinotto comandi cpl.
K550 / 2	201.885.20	Zahnrad (LEVER DRIVE)	Gear	Ruota dentata
K562 / 2	201.885.30	Hebel (ARM BRAKE)	Lever	Leva
K564 / 2	201.885.40	Drehfeder	Torsion spring	Molla spirale piana
K570 / 2	201.885.50	Cassettenhalter TOP	Bracket	Supporto
K590 / 2	201.887.50	Hebel (DOOR OPEN)	Lever	Leva

Spare Parts
Ersatzteile

Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
		ELEKTRISCHE TEILE:	ELECTRICAL PARTS:	PARTI ELETTRICO:
0010M	201.673.90	FE4212 TUNER (HF-MODULATOR)	FE4212 TUNER	FE4212 SINTONIZZATORE
0010M	201.829.60	FE4201 TUNER (HF-MODULATOR)	FE4201 TUNER	FE4201 SINTONIZZATORE
0020M	101.749.90	IF4151 ZF-EINHEIT	IF4151 UNIT IF	IF4151 UNITA FI
0020M	201.710.90	IF4130 ZF-EINHEIT	IF4130 UNIT IF	IF4130 UNITA FI
0140M		MPX V3H1 LTP.	MPX V3H1 P.C.B.	MPX V3H1 PIASTRA
0140M	203.098.90	MPX V3H3 LTP.	MPX V3H3 P.C.B.	MPX V3H3 PIASTRA
0050		MB V3L4/21/22/23/24 LTP. MAIN	MB V3L..... P.C.B. MAIN	MB V3L..... PIASTRA MAIN
C552	339.590.256	4,2-20PF Trimmer	4,2-20PF Trimmer	4,2-20PF Condensatore regol.
C598	202.764.60 S	220MIOF 5,5V Elko (MEMORY)	220MIOF 5,5V E Cap	220MIOF 5,5V Condens. elettrolit.
C777	110.048.26	220PF 500V 10% Kerko	220PF 500V 10% C cap	220PF 500V 10% Condens. ceramico
C801,804	309.433.745 S	MP Kondensator, 0,1µF, 275V, 20%	MP cap, 0,1µF, 275V, 20%	Condens. carta metal, 0,1µF, 275V
C805	202.577.30 S	47U0F 450V 20% Elko	47U0F 450V E Cap	47U0F 450V Condens. elettrol.
C806	202.154.10 S	33NF 630V 5% MP-Kondensator	33NF 630V 5% MPoly cap	33NF 630V 5% C PM
C809,813	242.947 S	100PF 1KV 10% Keramik-Kondensator	100PF 1KV 10% C cap	100PF 1KV 10% Condens. ceramico
C823	202.148.30	1MIOF 10V Elko (MEMORY)	1MIOF 10V E Cap	1MIOF 10V Condens. elettrolit.
C926	202.807.30	470N0F 50V 20% ELKO BIPOLAR	470N0F 50V 20% E cap bi-polar	470N0F 50V 20% CE
D081	339.577.024	ZTK33B Z-Diode	ZTK33B Z-Diode	ZTK33B Z-Diodo
D503	309.325.927	1N4148 Diode	1N4148 Diode	1N4148 Diodo
D507,508	339.529.964	ERA15-02 Diode	ERA15-02 Diode	ERA15-02 Diodo
D509	202.966.80	MTZJ7,5B Z-Diode	MTZJ7,5B Z-Diode	MTZJ7,5B Z-Diodo
D512,597	339.529.964	ERA15-02 Diode	ERA15-02 Diode	ERA15-02 Diodo
D596	905.258.00	1SS176-TPA4 Diode	1SS176-TPA4 Diode	1SS176-TPA4 Diodo
D803	339.527.096 S	S1WB(A)60 Brückengleichrichter	S1WB(A)60 Bridge rectifer diode	S1WB(A)60 Ponte di diodo
D804	464.790	ZPD3,9 5% Z-Diode	ZPD3,9 5% Z-Diode	ZPD3,9 5% Z-Diodo
D805	309.325.927	1N4148 Diode	1N4148 Diode	1N4148 Diodo
D806	339.529.824	RU1P Diode	RU1P Diode	RU1P Diodo
D807	339.529.964	ERA15-02 Diode	ERA15-02 Diode	ERA15-02 Diodo
D808	256.421	ZPD5V1 Z-Diode	ZPD5V1 Z-Diode	ZPD5V1 Z-Diodo
D809	339.527.175	ZPD6,8V 2% 0,5W Z-Diode	ZPD6,8V 2% 0,5W Z-Diode	ZPD6,8V 2% 0,5W Z-Diodo
D821	203.373.40	ERC91-02 Diode	ERC91-02 Diode	ERC91-02 Diodo
D822	238.020	MBR360 Diode	MBR360 Diode	MBR360 Diodo
D823	339.529.905	1SS136 Diode	1SS136 Diode	1SS136 Diodo
D824	404.312.40	EL1Z LF-F6 Diode	EL1Z LF-F6 Diode	EL1Z LF-F6 Diodo
D825	200.685.30	MA2091 Z-Diode	MA2091 Z-Diode	MA2091 Z-Diodo
D891	905.258.00	1SS176-TPA4 Diode	1SS176-TPA4 Diode	1SS176-TPA4 Diodo
D901	204.193.00	1SS184-R Diode SMD	1SS184-R Diode	1SS184-R Diodo
D930,931	266.939	ZPD15V Z-Diode	ZPD15V Z-Diode	ZPD15V Z-Diodo
DI01	252.727	GL451V IR-Diode	GL451V IR-Diode	GL451V IR-Diodo
DI01A	202.017.80	Halter LED, R4000	LED holder	Supporto LED
F801	202.621.70 S	1,6A FF 250V Sicherung	1,6A FF 250V Fuse	1,6A FF 250V Fusibile
IC101	202.703.40	TA8894AF IC	TA8894AF IC	TA8894AF CI
IC201	203.390.80	TA8892AN-B IC	TA8892AN-B IC	TA8892AN-B CI
IC218	339.555.219	IMH6 Transistor SMD	IMH6 Transistor	IMH6 Transistore
IC264	490.008.0679	IMZ1 Transistor	IMZ1 Transistor	IMZ1 Transistore
IC416,418	339.555.219	IMH6 Transistor SMD	IMH6 Transistor	IMH6 Transistore
IC501	202.126.60	TMP90PR74DF IC FLAT * unprogrammiert *	TMP90PR74DF IC	TMP90PR74DF CI
IC502	202.144.10	TA7267BP IC	TA7267BP IC	TA7267BP CI
IC503	202.577.60	TB6515AP IC	TB6515AP IC	TB6515AP CI
IC504	203.168.70	ST24C08/CB1 IC	ST24C08/CB1 IC	ST24C08/CB1 CI

Spare Parts
Ersatzteile

Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
IC505	202.504.10	PST7032MT IC	PST7032MT IC	PST7032MT CI
IC598	339.576.972	7805AC IC	7805AC IC	7805AC CI
IC599	202.504.30	PST7045MT IC	PST7045MT IC	PST7045MT CI
IC701	257.963	BA7755 IC	BA7755 IC	BA7755 CI
IC803	202.577.50	STRD6802 IC	STR-D6802 IC	STR-D6802 CI
IC821	202.147.40	LA5611 IC	LA5611 IC	LA5611 CI
IC920	202.705.20	TA8863AF IC	TA8863AF IC	TA8863AF CI
JP813	202.583.20 S	3,15A FF 125V Sicherung	3,15A FF 125V Fuse	3,15A FF 125V Fusibile
L505-508	110.685.00	ZBF253D-00 EMI-Filter	ZBF253D-00 EMI-Filter	ZBF253D-00 EMI-Filtro
L771	202.807.10	TRS-43KHZ Oszillator Spule	TRS-43KHZ Oscillator coil	TRS-43KHZ Bobina oscillatore
L781	202.807.20	TRS-70KHZ Oszillator Spule	TRS-70KHZ Oscillator coil	TRS-70KHZ Bobina oscillatore
L826,901	110.685.00	ZBF253D-00 EMI-Filter	ZBF253D-00 EMI-Filter	ZBF253D-00 EMI-Filtro
Q211,213	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
Q212,214	803.888.00	2SA1162Y-R Transistor SMD	2SA1162Y-R Transistor	2SA1162Y-R Transistore
Q215,261	803.888.00	2SA1162Y-R Transistor SMD	2SA1162Y-R Transistor	2SA1162Y-R Transistore
Q262	238.025	RN1404 (TE85L/R) Transistor SSD	RN1404 (TE85L/R) Transistor	RN1404 (TE85L/R) Transistore
Q410,438	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
Q417,439	238.025	RN1404 (TE85L/R) Transistor SSD	RN1404 (TE85L/R) Transistor	RN1404 (TE85L/R) Transistore
Q506,507	309.591.50	DTC114EKT146 Transistor SSD	DTC114EKT146 Transistor	DTC114EKT146 Transistore
Q508,509	242.866	2SA1020Y Transistor	2SA1020Y Transistor	2SA1020Y Transistore
Q510,511	109.661.00	RN1401 Transistor SSD	RN1401 Transistor	RN1401 Transistore
Q513	803.888.00	2SA1162Y-R Transistor SMD	2SA1162Y-R Transistor	2SA1162Y-R Transistore
Q514	202.448.30	2SA1162GR Transistor SMD	2SA1162GR Transistor	2SA1162GR Transistore
Q771,781	703.826.00	2SC1959 Transistor	2SC1959 Transistor	2SC1959 Transistore
Q772,773	202.366.10	2SC2411KQ Transistor SMD	2SC2411KQ Transistor	2SC2411KQ Transistore
Q802	202.455.10	PC120FY2 Fotokoppler	PC120FY2 Photo coupler	PC120FY2 Coupleur optique
Q822	203.043.30	KTD2092 Transistor	KTD2092 Transistor	KTD2092 Transistore
Q823	202.054.90	PQ12RF1 IC	PQ12RF1 IC	PQ12RF1 CI
QI01,02	252.729	NM5 PT493F PH-Transistor	NM5 PT493F PH-Transistor	NM5 PT493F PH-Transistore
QI01A	201.954.50	Halter (START-SENSOR) R4000	Holder	Supporto
QI02A	201.954.40	Halter (END-SENSOR) R4000	Holder	Supporto
QI03-05	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
R111	202.334.40 S	8R2 0,5W 5% Sicherheitswiderstand	8R2 0,5W 5% Fusible resistor	8R2 0,5W 5% Resistenza fusibile
R591	202.703.60 S	18R 0,250W 5% Sicherheitswiderstand	18R 0,250W 5% Fusible resistor	18R 0,250W 5% Resistenza fusibile
R805	202.581.30	39K0 2W 5% Metalloxydwiderstand	39K0 2W 5% Metal oxide resistor	39K0 2W 5% Resistenza metallico
R806	413.356.04	560R0 2W 5% Metalloxydwiderstand	560R0 2W 5% Metal oxide resistor	560R0 2W 5% Resistenza metallico
R807	266.582	Metallfilmwiderstand, 180Ω, 0,6W, 10%	Metal film resistor, 180Ω	Resistenza a filo, 180Ω
R810	200.547.20	0R510 2W 5% Metalloxydwiderstand	0R510 2W 5% Metal oxide resistor	0R510 2W 5% Resistenza metallico
RF826	202.615.20 S	1R5 0,250W 5% Sicherheitswiderstand	1R5 0,250W 5% Fusible resistor	1R5 0,250W 5% Resistenza fusibile
RF827	202.615.10 S	2R7 0,5W 5% Sicherheitswiderstand	2R7 0,5W 5% Fusible resistor	2R7 0,5W 5% Resistenza fusibile
SI02	101.376.10	SPPB62 Druckschalter	SPPB62 Push switch	SPPB62 Commutatore
T801	202.330.40 S	TF-Mains Filter 15MI0H	Line filter	Bobina di filtraggio
T802	203.346.60 S	Trafo Schaltnetzteil	Switched mode power transformer	Trasformatore elettronico
W001,002	101.828.50	Folienkabel 16x1,25mm 124mm wh	FFC-Jumper 16-pole	Cavo, 16poli
W501	101.763.50	Folienkabel 14x1,25mm 124mm wh	FFC-Jumper 14-pole	Cavo, 14poli
W503	101.674.20	Folienkabel 6x1,25mm 124mm wh	FFC-Jumper 6-pole	Cavo, 6poli
W701	101.644.50	Folienkabel 7x1,25mm 164mm wh	FFC-Jumper 7-pole	Cavo, 7poli
W704	101.674.20	Folienkabel 6x1,25mm 124mm wh	FFC-Jumper 6-pole	Cavo, 6poli
X401	202.636.70	4M433619Hz Quarz	4M433619Hz Crystal	4M433619Hz Quarzo
X501	202.647.70	16M0HZ Quarz	16M0HZ Crystal	16M0HZ Quarzo
X502	339.344.722	32K768HZ Quarz	32K768HZ Crystal	32K768HZ Quarzo
X503	202.503.30	17M734475HZ Quarz	17M734475HZ Crystal	17M734475HZ Quarzo

Spare Parts
Ersatzteile

Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
Z502	101.505.60	Statorkern TTN4	Stator core TTN4	Stator core TTN4
Z801,821	202.482.50 S	400MIO A 50V IC-Sicherung (IC-PROT)	400MIO A 50V IC-Protector	400MIO A 50V IC-Protector
Z822	202.147.90	DC-DC Converter	DC-DC Converter	Convertitore DC-DC
ZI01,02	101.376.70	GP1S562 PHOTO COUPLER	GP1S562 PHOTO COUPLER	GP1S562 PHOTO COUPLER
ZI10	202.151.60	HW-300B (F+1/2E) Hall Sensor	HW-300B Hall Sensor	HW-300B Hall Palpatore
ZI10A	201.954.30	Halter (HALL SENSOR)	Holder	Supporto
0020M		IF4130 ZF-EINHEIT	IF4130 UNIT IF	IF4130 UNITA FI
ZF	201.710.90	IF4130 ZF-EINHEIT	IF4130 UNIT IF	IF4130 UNITA FI
DI10	309.325.201	BA582 SMD Diode	BA582 SMD Diode	BA582 SMD Diodo
FI10	256.225	32M7HZ Filter LA7x7	32M7HZ Filter	32M7HZ Filtro
FI11	203.009.50	40M4HZ Filter LA7x7	40M4HZ Filter	40M4HZ Filtro
FI18	202.321.10	K9260M Oberflächenwellenfilter	K9260M Surface acoustic wave filter	K9260M Filtro a onde superficiali
FI19	490.008.0387	TSF5315U Oberflächenwellenfilter	TSF5315U Surf. acoustic wave filter	TSF5315U Filtro a onde superficiali
FI20	256.227	38M9HZ Filter 220NH LA7x7	38M9HZ Filter	38M9HZ Filtro
FI30	309.103.986	36M0HZ Filter LA7x7	36M0HZ Filter	36M0HZ Filtro
II20	339.576.911	TDA5930 IC	TDA5930 IC	TDA5930 CI
II30	256.671	LA7555 IC	LA7555 IC	LA7555 CI
PI20	309.509.173	10K0OHM 0,033W Potentiometer H	10K0OHM Potentiometer	10K0OHM Potenzometro
RI24	276.873 S	10R 0,3W 5% Sicherheitswiderstand	10R 0,3W 5% Fusible resistor	10R 0,3W 5% Resistenza fusibile
TI10	242.857	MMBTH10LT1 Transistor SMD	MMBTH10LT1 Transistor	MMBTH10LT1 Transistore
0020IA	M9470	IF4151 ZF-EINHEIT	IF4151 UNIT IF	IF4151 UNITA FI
ZF	101.749.90	IF4151 ZF-EINHEIT	IF4151 UNIT IF	IF4151 UNITA FI
DI01-03,05	309.325.201	BA582 SMD Diode	BA582 SMD Diode	BA582 SMD Diodo
DI30,43	309.325.201	BA582 SMD Diode	BA582 SMD Diode	BA582 SMD Diodo
FI10	256.225	32M7HZ Filter LA7x7	32M7HZ Filter	32M7HZ Filtro
FI11	203.009.50	40M4HZ Filter LA7x7	40M4HZ Filter	40M4HZ Filtro
FI12	202.705.10	72M4HZ Filter LA7x7	72M4HZ Filter	72M4HZ Filtro
FI20	256.227	38M9HZ Filter 220NH LA7x7	38M9HZ Filter	38M9HZ Filtro
FI40	309.103.986	36M0HZ Filter LA7x7	36M0HZ Filter	36M0HZ Filtro
II10	100.356.00	CXA1165/P IC	CXA1165/P IC	CXA1165/P CI
II20	339.576.911	TDA5930 IC	TDA5930 IC	TDA5930 CI
II30	309.368.356	TDA4445B IC	TDA4445B IC	TDA4445B CI
II40	309.368.696	U4454/B IC	U4454/B IC	U4454/B CI
PI20	309.509.173	10K0OHM 0,033W Potentiometer H	10K0OHM Potentiometer	10K0OHM Potenzometro
QI20	100.851.20	OFWG3965M Oberflächenwellenfilter	Surface acoustic wave filter	Filtro a onde superficiali
QI40	309.229.938	TSB5304U OFW-FILTER		
QI41	804.081.25	OFWL9360M Oberflächenwellenfilter	OFWL9360M Surface wave filter	OFWL9360M Filtro a onde superf.
TI01	242.047	RN1403 Transistor SSD	RN1403 Transistor	RN1403 Transistore
TI02	352.875.5000	BC857B Transistor SMD	BC857B Transistor	BC857B Transistore
TI03,06	249.063	BC847B Transistor SMD	BC847B Transistor	BC847B Transistore
TI04	242.857	MMBTH10LT1 Transistor SMD	MMBTH10LT1 Transistor	MMBTH10LT1 Transistore

Spare Parts
Ersatzteile

Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
0140M		MPX V3H1 LTP.	MPX V3H1 P.C.B.	MPX V3H1 PIASTRA
CD51	339.590.256	4,2-20PF Trimmer	4,2-20PF Trimmer	4,2-20PF Condensatore regol.
D01	109.686.00	MA111 Diode SMD	MA111 Diode	MA111 Diodo
ICD01	202.055.30	TA78L008AP IC	TA78L008AP IC	TA78L008AP CI
ICD03	202.473.70	MSP3410 IC	MSP3410 IC	MSP3410 CI
ICD04,05	276TX3815	M5218AP IC	M5218AP IC	M5218AP CI
JPD17	201.892.20 S	250MIO A 50V IC-Sicherung (IC-PROT)	250MIO A 50V IC-Protector	250MIO A 50V IC-Protector
QD06,10,90	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
QD07,11	604.558.90	IMX1 Transistor ARRAY	IMX1 Transistor	IMX1 Transistore
QD09	202.058.00	RN2402 Transistor SSD	RN2402 Transistor	RN2402 Transistore
QD12	203.022.60	KTA1273 Transistor	KTA1273 Transistor	KTA1273 Transistore
QD13	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore
XD01	202.096.20	18M432HZ Quarz	18M432HZ Crystal	18M432HZ Quarzo
ZD01-12	110.685.00	ZBF253D-00 EMI-Filter	ZBF253D-00 EMI-Filter	ZBF253D-00 EMI-Filtro
ZD91	202.984.10	6M5HZ Keramikfilter	6M5HZ Ceramic filter	6M5HZ Filtro ceramico
0072M		SUB MB V3L..... LTP. MAIN	SUB MB V3L..... P.C.B. MAIN	SUB MB V3L..... PIASTRA MAIN
IC891	202.493.90	PQ05SZ11 IC	PQ05SZ11 IC	PQ05SZ11 CI
IC980	202.729.70	M5222FP IC	M5222FP IC	M5222FP CI
IC981	202.715.70	LA6458M IC	LA6458M IC	LA6458M CI
Q001,026	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
Q002,060	803.888.00	2SA1162Y-R Transistor SMD	2SA1162Y-R Transistor	2SA1162Y-R Transistore
Q003	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore
Q061,982	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
Q070	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore
Q071	202.058.00	RN2402 Transistor SSD	RN2402 Transistor	RN2402 Transistore
Q075	242.047	RN1403 Transistor SSD	RN1403 Transistor	RN1403 Transistore
Z001	203.021.60	5M5HZ Keramikfilter	5M5HZ Ceramic filter	5M5HZ Filtro ceramico
Z002	100.009.20	6M0HZ Keramikfilter	6M0HZ Ceramic filter	6M0HZ Filtro ceramico
Z060	202.984.10	6M5HZ Keramikfilter	6M5HZ Ceramic filter	6M5HZ Filtro ceramico
0031M	M9460/V3445SV	TMB1 V3L2 LTP. TERMINAL BOARD 1	TMB1 V3L2 P.C.B.	TMB1 V3L2 PIASTRA
DF101,102	339.527.177	LL4148 Diode SMD	LL4148 Diode	LL4148 Diodo
DF201	242.038	ZMM9,1 Z-Diode SMD	ZMM9,1 Z-Diode	ZMM9,1 Z-Diodo
DF202	339.527.177	LL4148 Diode SMD	LL4148 Diode	LL4148 Diodo
IF101	242.045	HEF4052BT IC	HEF4052/BT, IC	HEF4052/BT, CI
IF102,103	276TX3894	HEF4053/BT IC	HEF4053/BT IC	HEF4053/BT CI
IF105	101.066.70	STV6400 IC	STV6400 IC	STV6400 CI
IF106	101.443.10	SDA5648 IC	SDA5648 IC	SDA5648 CI
IF107	490.008.0367	MC1458/D IC	MC1458/D IC	MC1458/D CI
PF013	339.540.938	Buchse Euro AV (SCART), BK2093	Scart socket	Pres a peritelevision
PF014	102.517.20	Buchse Euro AV (SCART), BU2093	Scart socket	Pres a peritelevision
PF015	102.054.30	Cinch Buchse	Cinch socket	Boccola cinch
RF201	309.580.990 S	8R2 0,3W 5% Sicherheitswiderstand	8R2 0,3W 5% Fusible resistor	8R2 0,3W 5% Resistenza fusibile
TF101,102	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF107	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore

Spare Parts
Ersatzteile

Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
TF112,113	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore
TF114,116	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF115,117	270TX2446	BC858B Transistor SMD	BC858B Transistor	BC858B Transistore
TF201	603.908.00	2SC2236-Y Transistor	2SC2236-Y Transistor	2SC2236-Y Transistore
TF202	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF203	270TX2446	BC858B Transistor SMD	BC858B Transistor	BC858B Transistore
0031M	M9470/V4445SV	TMB1 V3N2/3 LTP. TERMINAL BOARD 1	TMB1 V3N2/3 P.C.B.	TMB1 V3N2/3 PIASTRA
DF101,102	339.527.177	LL4148 Diode SMD	LL4148 Diode	LL4148 Diodo
DF207,208	339.527.177	LL4148 Diode SMD	LL4148 Diode	LL4148 Diodo
IF101	242.045	HEF4052BT IC	HEF4052/BT, IC	HEF4052/BT, CI
IF102,103	276TX3894	HEF4053/BT IC	HEF4053/BT IC	HEF4053/BT CI
IF105	101.066.70	STV6400 IC	STV6400 IC	STV6400 CI
IF106	101.443.10	SDA5648 IC	SDA5648 IC	SDA5648 CI
IF107	490.008.0367	MC1458/D IC	MC1458/D IC	MC1458/D CI
PF013	339.540.938	Buchse Euro AV (SCART), BK2093	Scart socket	Pres a peritelevision
PF014	102.517.20	Buchse Euro AV (SCART), BU2093	Scart socket	Pres a peritelevision
PF015	102.054.30	Cinch Buchse	Cinch socket	Boccola cinch
TF101-103	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF104,115	270TX2446	BC858B Transistor SMD	BC858B Transistor	BC858B Transistore
TF107,112	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore
TF113	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore
TF114,116	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF117,203	270TX2446	BC858B Transistor SMD	BC858B Transistor	BC858B Transistore
TF118,119	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF202	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF210	202.054.90	PQ12RF1 IC	PQ12RF1 IC	PQ12RF1 CI
0032M	M9460/70/V3445	TMB2 V3N1 LTP. TERMINAL BOARD 2	TMB2 V3N1 P.C.B.	TMB2 V3N1 PIASTRA
IF801	508.992.40	BA7025L IC	BA7025L IC	BA7025L CI
LF801	202.751.90	7K8HZ 20MIOH Filter LA7x7	7K8HZ Filter	7K8HZ Filtro
QF801	203.155.50	4M5HZ Keramikfilter	4M5HZ Ceramic filter	4M5HZ Filtro ceramico
TF801,804	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF805,830	339.555.241	BC848B Transistor SMD	BC848B Transistor	BC848B Transistore
TF807	109.662.00	RN1402 (TE85L/R) Transistor SSD	RN1402 (TE85L/R) Transistor	RN1402 (TE85L/R) Transistore
TF808,831	238.025	RN1404 (TE85L/R) Transistor SSD	RN1404 (TE85L/R) Transistor	RN1404 (TE85L/R) Transistore
0025M		VB2 V3H1 LTP. VIDEO 2	VB2 V3H1 P.C.B. VIDEO 2	VB2 V3H1 PIASTRA VIDEO 2
IC231	201.933.20	TL8844P IC	TL8844P IC	TL8844P CI
IC431	201.933.30	TL8843P IC	TL8843P IC	TL8843P CI
Q235,435	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
Q436,442	238.025	RN1404 (TE85L/R) Transistor SSD	RN1404 (TE85L/R) Transistor	RN1404 (TE85L/R) Transistore
Q437,440	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
Q441,485	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
Q486,487	803.888.00	2SA1162Y-R Transistor SMD	2SA1162Y-R Transistor	2SA1162Y-R Transistore
Q488	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore
0035M		VB3 V3H1 LTP. VIDEO 3	VB3 V3H1 P.C.B. VIDEO 3	VB3 V3H1 PIASTRA VIDEO 3
Q414,415	703.828.00	2SC2712Y-R Transistor	2SC2712Y-R Transistor	2SC2712Y-R Transistore

Spare Parts
Ersatzteile

Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
0210M	V3445SV	KDB1 V3R2 LTP. TIMER/DISPLAY	KDB1 V3R2 P.C.B. TIMER/DISPLAY	KDB1 V3R2 P.TIMER/DISPLAY
DK66	242.069	ZMM4,7 Z-Diode SMD	ZMM4,7 Z-Diode	ZMM4,7 Z-Diodo
DK81	339.527.177	LL4148 Diode SMD	LL4148 Diode	LL4148 Diodo
GK01	202.646.50	Fluoreszenzanzeige/Display BJ282GK	Fluorescent display panel	Indicatore/Display
GK02-04	202.686.00	TSIP5201 IR-Diode	TSIP5201 IR-Diode	TSIP5201 IR-Diodo
GK11-14	203.197.20	LG5411S D-Disled GN	LG5411S D-Disled	LG5411S D-Disled
GK16,18	203.197.20	LG5411S D-Disled GN	LG5411S D-Disled	LG5411S D-Disled
IK01	201.350.10	TMP87PP71F IC FLAT * unprogrammiert *	TMP87PP71F IC	TMP87PP71F CI
PK04	339.542.058	Kopfhörerbuchse 3,5mm	Headphone socket	Boccola cuffia
QK01	309.335.711	8M0HZ Quarz	8M0HZ Resonator	8M0HZ Risonatore
SK01-04,06	203.459.10	Taktschalter	Tact switch	Interruttore
SK08,09-11	203.459.10	Taktschalter	Tact switch	Interruttore
TJ06,07	339.556.787	BC337-40 Transistor	BC337-40 Transistor	BC337-40 Transistore
TK06	803.888.00	2SA1162Y-R Transistor SMD	2SA1162Y-R Transistor	2SA1162Y-R Transistore
ZK01	201.309.10	TFMT5330 IC *Infrarot Empfänger*	TFMT5330 IC *Infrared receiver*	TFMT5330 CI *Ricevit. infrar.*
0212M	NM	KDB2 V3R4 LTP. FRONTBUCHSEN	KDB2 V3R4 P.C.B. SOCKETS	KDB2 V3R4 P. PRESE
BJ05A	101.763.30	Folienkabel 5x1,25mm 124mm	Wire EQ flex, 5-pole	Cavo, 5poli
GK15,17	203.197.20	LG5411S D-Disled GN	LG5411S D-Disled	LG5411S D-Disled
PK01	204.838.20	Cinch Buchse, JPJ2022-01-040	Cinch socket	Boccola cinch
PK02	309.300.90	Cinch Buchse JPJ2022-01-030 WH	Cinch socket	Boccola cinch
PK03	110.430.10	Klinkenbuchse 6,3mm RED	Pin jack 6,3mm	Presa cuffia 6,3mm
SK05,07	203.459.10	Taktschalter	Tact switch	Interruttore
0216M	NM	FJB2 V3U1 LTP. FRONT	FJB2 V3U1 PCB JACK	FJB2 V3U1 PIASTRA PRESA
BE001	101.763.60	Folienkabel 7x1,25mm 194mm	Wire EQ flex, 7-pole	Cavo, 7poli
BE03	101.829.20	Klinkenbuchse 3,5mm	Headphone socket	Boccola cuffia
DE01,02	339.527.177	LL4148 Diode SMD	LL4148 Diode	LL4148 Diodo
TE01-05	249.063	BC847B Transistor SMD	BC847B Transistor	BC847B Transistore
0212M	M9470	KDB2 V3S1 LTP. FRONTBUCHSEN	KDB2 V3S1 P.C.B. SOCKETS	KDB2 V3S1 P. PRESE
BE001	101.763.60	Folienkabel 7x1,25mm 194mm	Wire EQ flex, 7-pole	Cavo, 7poli
BE003	101.763.30	Folienkabel 5x1,25mm 124mm	Wire EQ flex, 5-pole	Cavo, 5poli
BE04,05	202.043.10	Cinch Buchse, JPJ2022-01-010 BK	Cinch socket	Boccola cinch
BE06	202.727.80	Cinch Buchse, JPJ1022-01-010 BK	Cinch socket	Boccola cinch
BE07	339.542.058	Kopfhörerbuchse 3,5mm	Headphone socket	Boccola cuffia
BE08	102.062.30	Kopfhörerbuchse 3,5mm	Headphone socket	Boccola cuffia
DE01,02	339.527.177	LL4148 Diode SMD	LL4148 Diode	LL4148 Diodo
TE01-05	249.063	BC847B Transistor SMD	BC847B Transistor	BC847B Transistore
Pos.	Art.-Nr Part No. No.articolo	Bezeichnung	Part	Descrizione
		ALLGEMEINETEILE:	GENERAL PARTS:	PARTI GENERALI:
		ZUBEHÖR/BEIPACK:	ACCESSORIES:	ACCESSORI:
FB / M9460	202.556.70	RC1405 IR-GEBER	RC1405 REMOTE CONTR. UNIT	RC1405 TELECOMANDO INFRA
M9470	203.729.90	RC1408X IR-GEBER	RC4108X REMOTE CONTR. UNIT	RC4108X TELECOMANDO INFRA
V3445SV	202.558.30	RC4208X IR-GEBER	RC4208X REMOTE CONTR. UNIT	RC4208X TELECOMANDO INFRA
V4445SV	202.558.30	RC4208X IR-GEBER	RC4208X REMOTE CONTR. UNIT	RC4208X TELECOMANDO INFRA
0080C	238.275	Antennenkabel	Antenna cable	Cavo antenna
0195	202.727.50	Netzanschlußleitung	Power cord	Cavo di rete
-	102.760.00	Scart AV Kabel	Scart AV Cable	Scart AV Cavo
0080C	252.014	Anschlusskabel, Cinch	Connection lead, cinch	Cavo di allacciamento, cinch
		SERVICE-UNTERLAGEN:	SERVICE INFORMATION:	INFORMAZIONI PER L'ASSISTENZA:
SI	102.859.90	Serv.Info R4000 MONO/HIFI Einst.Anl. m/e.	Mech. adjust service	Regol. service mecc.

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